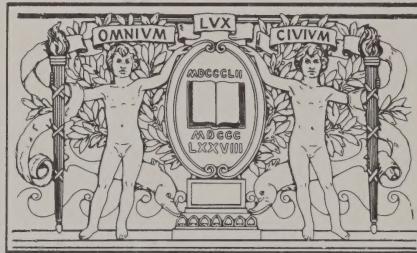


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# **the south end row house**

**and its rehabilitation for low-income residents**





# **the south end row house**

## **and its rehabilitation for low-income residents**

by

**ROBERT B. WHITTLESEY**

*executive director/south end community development, inc.*

**THE REPORT ON LOW-INCOME HOUSING  
DEMONSTRATION PROJECT (MASS LIHD-3)**

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## PREFACE

Over the last three or four decades housing in America has become increasingly a matter of public policy and programs. It is now generally conceded that government intervention is necessary if we are to meet national and local goals of a decent home in a suitable environment for every American. Effective public programs, however, depend upon the public's and the urban development technician's knowledge of housing, how it is built and operated, the constraints which impede it, and the incentives which produce it. Much information about housing is in private hands. Where experience is reported, it is often done so guardedly and without sufficient detail. This is true even when the housing is produced with government assistance. More complete analysis and reporting of technical information about housing and urban development is essential.

Understanding the nature of low and low-moderate income housing is of special importance. Such housing needs governmental subsidies, tax relief, and other special arrangements which inevitably introduce difficulties in development and operation. It is often constructed at locations chosen not for the ease of construction, but where a site or a building to be rehabilitated is available. Because low-income housing must generally meet prescribed cost limits and funding, it is often built cheaply and with inadequate facilities. Rents are sometimes only maintained by limiting services and care of property. Regardless of whether these things should be so or not, low and low-moderate income housing has special characteristics which should be more widely understood.

The public is often confused by the delays and difficulties which beset housing development. Each day brings new pronouncements of national commitments that every family will have good housing in a proper environment, yet blighted neighborhoods with substandard housing remain. Congress enacts legislation which provides greater opportunities than ever before for private enterprise to build housing for all income groups, yet housing shortages continue. The public must be given a better chance to understand why.

With these things in mind, the author prepared this report. The intent was to describe accurately and objectively the results of a housing experiment in sufficient detail that others might interpret the data and its application to other situations. The type of housing rehabilitation with which the project was concerned was of a special character and involved reconstruction and conversion of the structures. Rehabilitation costs were higher than expected. These costs were not readily accepted by public agencies and developers. We believe, however, that the costs are reliable and that they are now accepted by experienced contractors.

It was not the burden of the study or this report to determine the merits of residential rehabilitation generally or to compare it with constructing new housing. That question is one which must be settled on a case-by-case basis, taking all the social and economic factors into account. While the rehabilitation costs determined under this experiment were high, they were still lower than the costs for new construction.

It was felt that a comprehensive report on the project would also serve as a useful illustration of the "web of constraints" which surrounds low-income housing. It is noted that the project took several years to complete and that during that time, available programs and attitudes of public agencies changed. If the project were started today, it would be done differently. However, it was the author's job to report the study as it happened.

South End Community Development, Inc. undertook and completed a difficult assignment. It is indebted to many persons in public agencies and elsewhere for their assistance and cooperation. Special thanks go to Director John W. Flynn and the staff of the Boston office of the Federal Housing Administration (FHA) and to Assistant Commissioner M. Carter McFarland and Mrs. Sybil Phillips in Washington. The cooperation of the First National Bank of Boston and auditors, Arthur Andersen & Co., made the job easier, and special thanks are due Mr. Rudolph Kass,

attorney on the FHA processing, and Architects James L. Harris, Robert Peabody Brown and Samuel Mintz. The project would not have been possible without initial grants from the Committee of the Permanent Charity Fund of Boston and from United South End Settlements.

The author would like to express his appreciation to the Officers and Board of Directors of South End Community Development, Inc. for giving generously of their time and talents, and for their contributions to the project. The author is particularly indebted to Mr. F. Douglas Cochrane for his help and counsel. Thanks are also due members of the staff for their dedication and hard work. These include Mr. Louis J. Rota, construction superintendent on the study projects, Mr. Edward P. Brady, Mrs. Elizabeth Brown Fenton, Mrs. Christina Nemeth, and Mrs. Betty Meredith. The author wishes to thank Assistant Secretary H. Ralph Taylor for his help and Mr. Charles W. Liddell for his interest and encouragement throughout.

As this report goes to the printer, South End Community Development, Inc. plans a new and much larger rehabilitation venture in the South End. This sequel to the demonstration is being predicated upon the findings of the study and will utilize expertise gained by SECD in carrying out the project. It suggests that experiments in low-income housing will be beginnings rather than ends, for solutions are not easy and we find them only after much has been learned.



## ABSTRACT

The South End of Boston is a predominantly residential area, just one mile from downtown Boston. Developed during the last century, the area has now the largest proportion of families and persons with incomes under \$3,000 of any district in Boston. The typical residential structure in the South End is a four or five-story, rather elegant brick row house, built originally as a single family home. An urban renewal plan has been adopted for the South End which calls for the rehabilitation of 75% of the residential structures, 98% of which are these row houses. Success of the renewal plan depends upon whether it is feasible and practical to convert these row houses into standard apartments and whether this can be done at costs which will permit rents which the low-income families and persons now living in the area can afford.

A Low-Income Housing Demonstration under a grant from the Department of Housing and Urban Development was undertaken to seek hard evidence of feasibility of rehabilitating South End houses. The project was carried out by South End Community Development, Inc. (SECD), a non-profit corporation. A combination of means was employed including the use of a non-profit corporation eligible for real estate tax relief, acquisition of tax-foreclosed properties from the City of Boston, use of the corporation's own professional staff and construction workers to the extent feasible, financing the rehabilitations with loans at below-market interest rates and ownership and operation of the properties on a not-for-profit basis.

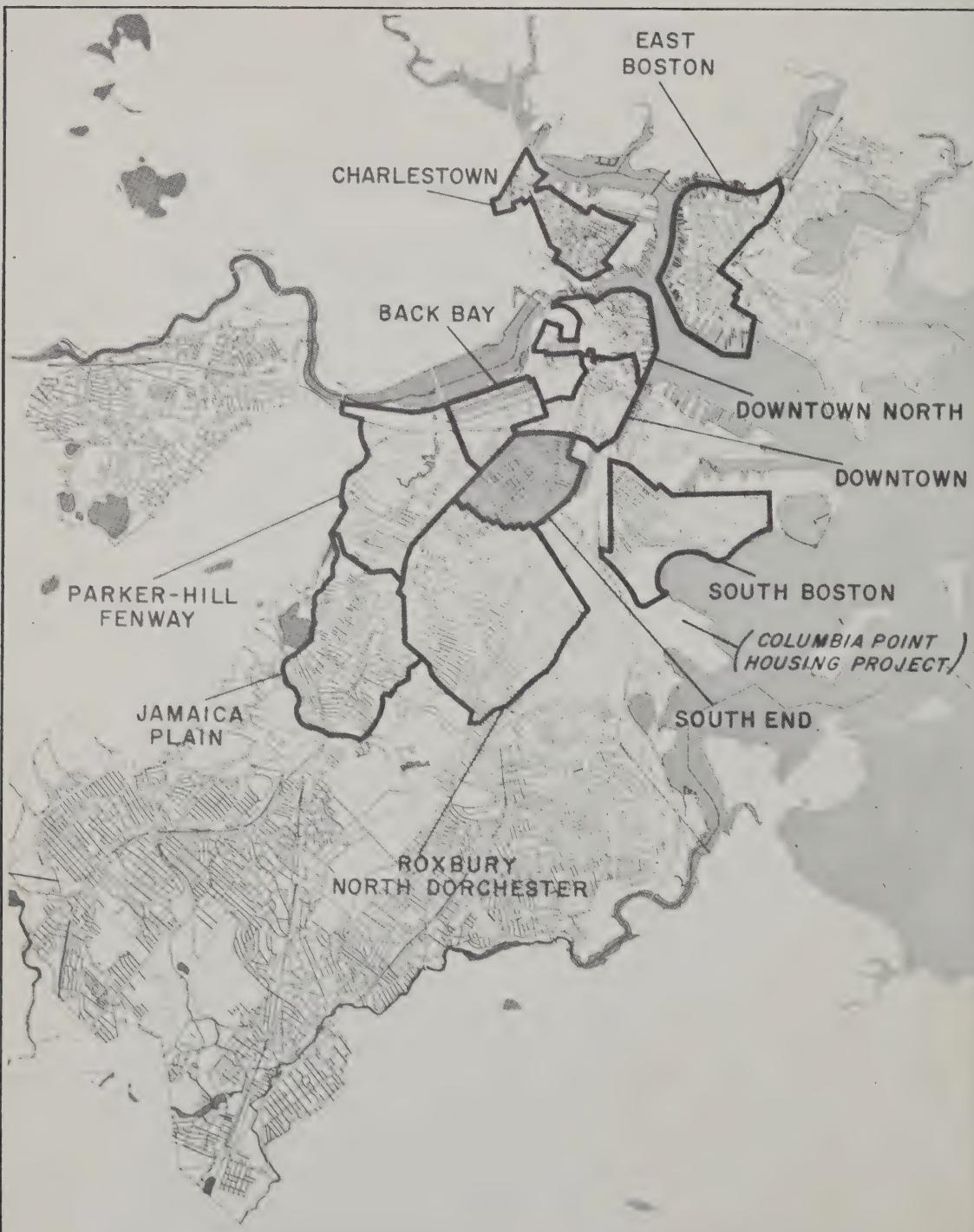
Eleven row houses in various sections of the South End were acquired and rehabilitated in accordance with HUD/FHA regulations. The rehabilitations of the houses were financed with mortgage loans insured by the Federal Housing Administration under the provisions of Section 221 (d)(3) of the National Housing Act, as amended. Seven FHA multi-family housing project mortgage loans were obtained to finance the rehabilitations. Four row houses were rehabilitated each as a single FHA housing project. The fifth and sixth projects were pairs of row houses, and the

seventh project consisted of three houses on non-contiguous lots. Each house had from three to five apartments when completed.

The cost of rehabilitation and the methods used are described in this report. Some of the findings include:

1. That rehabilitation of South End row houses for occupancy by low-income families is feasible only when there is a rent subsidy whereby the tenants are required to pay only a portion of the rent according to their family income. Average family income of tenants in the study projects is \$3,200 per year.
2. Rehabilitation of South End row houses into standard FHA apartments requires conversion and substantial reconstruction of the houses, with costs averaging \$12.30 per gross square foot. The construction work was complicated and required craftsmanship.
3. Mortgage loan financing under Section 221 (d)(3) is lengthy and impractical for small projects.
4. Rehabilitation of South End row houses provides little opportunity to introduce cost-saving construction techniques.
5. Management of small, scattered, FHA multi-family housing projects occupied by low-income families is difficult and requires special services.

Information gained in the study suggests that for successful, large scale rehabilitation of South End housing for low-income families, new tools and commitments from public and private agencies must be forthcoming.



## BACKGROUND

### GENERAL INTRODUCTION

The South End of Boston in the 18th century was a mere neck of land between Boston and the mainland. Early in the 19th century land filling operations widened this neck, both on the ocean or South Bay side and on the west or Back Bay side. By 1830 the four main streets which run the length of the South End (Tremont Street, Shawmut Avenue, Washington Street and Harrison Avenue) had been constructed. The area developed rapidly around 1850. Many of the blocks and streets in the South End were laid out with special regard for architectural unity. In some cases, houses were grouped around squares to conform to a development plan. After the Civil War, a number of important churches and institutions were built in the South End, and for a time it was a fashionable area for upper and middle-income families.

During the last third of the 19th century, the South End began to decline. Competition from the more fashionable Back Bay section of Boston and economic difficulties resulting from the 1873 real estate panic hurt the South End. Many of the large houses were converted into lodging and tenement houses, and the area became a "port of entry" for immigrants and newcomers to the City, a primary reason for the South End's present heterogeneous population.

In 1910, the South End had a population of 76,000. By 1960 the population had declined to 34,000 persons, 41% of whom were nonwhite. (See Table I). A large proportion of the present population is single individuals and elderly. According to a study made in 1962 by the Boston Redevelopment Authority (BRA), over half of the families and one person households had incomes below \$3,000 per year. In 1960, 53.9% of the housing units in the South End were substandard and 10.4% of the units vacant. (See Table II). The South End has 923 licensed lodging houses, 116 licensed bars and liquor stores and a good portion of Boston's skid row. Its commercial areas are run down, particularly under the elevated rapid transit line on Washington Street. Many of its substantial and rather elegant row houses are now deteriorated, in poor condition, and over-crowded. Mortgage financing for improvements or home ownership is difficult to obtain. Public facilities in the area are inadequate. Four of the seven public schools in operation in 1964 were built before 1884. There are

BACKGROUND

TABLE I  
POPULATION OF SOUTH END

Year	White	Non-White	Total
1940	35,721	15,309	51,030
1950	38,046	16,875	54,921
1960	20,095	14,038	34,133
1966*	13,320	12,799	26,119

\*Estimated by the Boston Redevelopment Authority (BRA)

Source: U.S. Census



TABLE II  
CHARACTERISTICS OF DWELLING UNITS IN  
SOUTH END AND BOSTON IN 1960

Item	Total	Owner dwelling units	Percent occupied dwelling units	Percent owner occupied units	Percent Vacant units	Sub- standard units	Percent sub- standard units
	dwelling units	units	units	units	units	units	units
South End	20,489	1,574	7.7%	2,135	10.4%	11,051	53.9%
Boston	238,547	61,291	25.7%	9,300	3.9%	49,672	20.8%

Source: Housing in Boston, published by Boston Redevelopment Authority, July 1967

only nine acres of playground space for the South End's 7,500 children. The area is beset with all the usual adverse environmental conditions found in grey areas of core cities, including a lack of parking and inappropriate mixed land use. As indicated in Table I, there has been a major change during the last 2½ decades in the proportion of non-whites living in the South End.



## BACKGROUND

For all of its faded elegance, the South End has major sources of strength. It lies just one mile from City Hall in Downtown Boston and is a convenient in-town area well served by mass transportation. There are major facilities, institutions and churches in or near the area, including the Prudential Center, Boston City Hospital, Boston University Medical Center, Franklin Institute, Franklin Square House, Northeastern University and a number of important churches, including the Cathedral of the Holy Cross. Within the South End, there is a major commercial and industrial area which provides employment for more than 12,000 people. The residential structures, primarily 4 and 5 story brick row houses, have considerable charm and can be rehabilitated into attractive town houses and apartments for families and persons desiring to live in the center of the city. Owners occupy 10% of



the housing units and almost 50% of the residential structures, according to the 1960 Census and a 1962 Building Survey made by the BRA. This accounts in part for the attachment and interest that so many South End residents have for the area and its future.

When the administration of Mayor John F. Collins took office in 1960, the South End was given high priority in Boston's 90 million dollar urban renewal development plan. A South End Urban Renewal Committee was organized in 1961 and the process of discussing a renewal plan with neighborhood groups was started. In 1962 land acquisition in the Castle Square area was started under Early Land Acquisition procedures. The relocation of the 644 families from that site was carried out by United South End Settlements under a contract with the BRA. The community's desire to keep the South End a residential neighborhood was indicated by a controversy which arose over the redevelopment of the Castle Square site. Original plans proposed that only one-third of the site be used for residential purposes. After many heated discussions and meetings, the plan for the Castle Square site was revised so that two-thirds of the site would be used for residential purposes. The Castle Square housing development, a 500-apartment project, built under the HUD/FHA Section 221 (d)(3) program, has been completed and rented, and has over 800 names on the waiting list for apartments.

An initial plan for the South End, prepared by the BRA, was rejected by the community. The plan featured a green-way through the center of the area and would have required considerable property acquisition and relocation of families. A new plan was prepared and presented to the Citizens Urban Renewal Committee in 1964 and shortly thereafter was reviewed with the various neighborhood associations. The Urban Renewal Committee voted to accept the new plan in June of 1965. A public hearing, held on August 23, 1965, indicated widespread community support for the plan. The plan was formally adopted by the Boston City Council in December 1965.

The 616 acre South End Urban Renewal Project is one of the largest urban renewal projects in the country. It is a predominantly residential project, although the renewal plan does provide for a large industrial and institutional area along one side of the project. The plan emphasizes residential rehabilitation and proposes

## BACKGROUND

that 75% of the residential structures be rehabilitated. The renewal plan suggests that this would be carried out for the benefit of South End residents who choose to remain in the area. As a substantial proportion of these residents are low-income families and persons, residential rehabilitation which permits rents which low-income families and persons can afford is a prerequisite for the success of the plan.

Prior to the approval of the South End Urban Renewal Plan, there had been little residential rehabilitation in the area. There had been some rehabilitation for occupancy by upper and middle-income families and individuals in the section of the South End nearest downtown and the new Prudential Center. One private real estate firm had acquired more than 50 row houses in this area for the purpose of rehabilitating them. Several institutions had expressed an interest in doing rehabilitation as well as construction of new housing in the South End. Mortgage loans were hard to obtain and, for those who had established credit, a 10-12 year mortgage at 50% of the value of the property and at the prevailing interest rate was considered relatively attractive since mortgages were often for shorter terms and for very much higher interest rates. The South End was off limits for many lending institutions.

The BRA opened a special site office in 1963 to gather information on the cost of rehabilitating South End houses. Estimates of residential rehabilitation made in 1964 varied from \$2,500 to \$4,000 per apartment, but there was little actual experience to back up these estimates. In 1964 the question still remained as to how South End houses were to be rehabilitated and whether this could be done at a cost that would allow rents within the means of low-income families who lived in the area.

## SOUTH END COMMUNITY DEVELOPMENT, INC.

United South End Settlements (USES), a group of settlement houses now merged into a single entity, had been active in the field of housing in the South End for many years. Its housing programs had included operation of a model lodging house, surveys of housing conditions and formation of societies interested in improving housing and conditions generally, in the South End. In 1957,

## BACKGROUND

USES made an extensive analysis of South End housing conditions and demographic data. In 1959 Carl Feiss, a planning consultant, was engaged by USES to consider the possibilities and potentialities of Urban Renewal for the South End. In 1963, James Harris, architect and planner, was asked to make a study of how residential rehabilitation might be accomplished. The Harris study recommended that United South End Settlements (USES), together with other major institutions in the area, form a community development corporation to undertake residential rehabilitation for low-income families. Some insight into rehabilitation was obtained when the settlement house rehabilitated a row house for a neighborhood center. This experience, together with a knowledge of housing needs, gained in part by its relocation of families from the Castle Square area, convinced USES that further investigation of methods and costs of rehabilitation for low-income families was essential. In the spring of 1964 an application was filed with the Department of Housing and Urban Development, (then the Federal Housing and Home Finance Agency) for a low-income housing demonstration grant pursuant to Section 207 of the National Housing Act of 1961, as amended. A grant of \$205,300 was awarded to USES in July of 1964. USES executed a contract with South End Community Development, Inc., a new non-profit corporation, to carry out the program.

South End Community Development, Inc., (SECD) was formed on May 29, 1964. The Corporation was organized under Chapter 180 of the General Laws of the Commonwealth of Massachusetts for the purpose of acquiring, improving (through rehabilitation, new construction or otherwise), and making available at the lowest possible cost to persons and families of low-income of every race, religion and nationality, houses in the South End of Boston. The Corporation was expected to stimulate, by example or otherwise, the renovation or improvement of property in the South End and generally to promote neighborhood improvement for persons who desire to live and raise their families in safe sanitary housing in the area.

Initial capital for the new Corporation was provided by a grant of \$50,000 from USES, and a grant of \$75,000 from the Committee of the Permanent Charity Fund of Boston. In his letter advising the Corporation of the Committee's grant, Mr. Wilbur J. Bender wrote as follows: "In making this grant the Committee realizes

## BACKGROUND

that there is no assurance that the goal of this project, to demonstrate the feasibility under certain conditions of providing decent rehabilitated housing at rents which low-income families can afford to pay, will be achieved. Nevertheless, it believes that the problem with which this new enterprise is concerned is of vital importance for the future of Boston and other cities . . .”

The Board of Directors of SECD is made up of persons concerned with the problems of housing for low-income families from the point of view of the local community and the city and metropolitan area. The Board includes local resident leaders in the South End, and persons familiar with banking, real estate and community affairs. Eight of the original twenty-six board members were residents of the South End and ten were members of the Board of Directors of USES. The Board, in addition to establishing policy for the Corporation, provides both informed judgment on the community's needs and resources as well as expert opinion on specific operations of the Corporation.

## THE EXPERIMENTAL PROJECT

Section 207 of the National Housing Act, as amended, provides for “demonstrations” of new and improved ways of producing low-income housing. In view of the lack of definitive knowledge about rehabilitation of small structures, such as the South End row house, for occupancy by low-income families, a study program was warranted. While no one was prepared to offer a radically new or improved way of producing housing through rehabilitation of row houses, it was proposed that, by using a combination of means, the currently available programs and procedures could be tested. A non-profit development corporation for which charitable grants were available seemed to be the most logical administrative mechanism for this kind of study and was presumed to have the greatest number of advantages for low cost housing development. The application filed with the Department of Housing and Urban Development listed the purposes of the study as follows: “Provision of private rental housing to low-income families or persons through the combination of means following: Use of a non-profit corporation eligible for tax advantages, to acquire tax delinquent

and other low cost residential structures, to rehabilitate them through use of its own professional staff and construction workers to the extent feasible, to finance the properties at below-market interest rates, for non-profit ownership and operation with financing proceeds being used on a revolving basis for extension of the operation. The non-profit corporation will provide capital for equity in the properties as necessary to insure rents within low-income reach, if at all feasible."

The application suggested that the results of the program would provide important information on whether or not a private non-profit corporation, using the best available techniques, could convert the type of deteriorated row housing existing in the South End of Boston into standard apartments at costs such as to allow rentals in the \$50 to \$90 per month range. The program was to provide accurate costs for rehabilitation, to produce suggested designs for rehabilitating row housing, to indicate whether savings could be realized as the organization gained skill and experience in rehabilitation, to indicate what kinds of resources an organization should have when launching a similar program, and to provide criteria for the selection of properties to be used in a rehabilitation program. The Demonstration Program contemplated the rehabilitation of some 50 to 65 housing units.

The application had the support of key officials and persons in the City of Boston. The Development Administrator assured the venture his support and confirmed that tax-foreclosed city-owned property and land could be released, without consideration, to the Corporation for rehabilitation purposes. The local insuring office of HUD/FHA offered its support and suggested that "prior to the selection of any properties for Demonstration purposes, the insuring office be consulted as to whether or not 1) the location is acceptable 2) the physical security is acceptable and 3) it can be reasonably expected that the property would generate enough income to pay for the debt service mortgage."

The HUD Grant Contract incorporated the recommendations of the local office of HUD/FHA and, in effect, limited the study to housing financed with FHA insured mortgage loans. This limitation resulted in delay. It was impossible for SECD to undertake an immediate trial building rehabilitation using private

## BACKGROUND

financing and equity as originally contemplated.

The most favorable HUD/FHA program available in 1964 to a non-profit corporation was the below-market interest rate program pursuant to Section 221 (d)(3) of the National Housing Act, as amended. This program permits mortgage loans for non-profit corporations equal to 100% of development costs. Use of equity capital in this situation is unwarranted, except as a contingency for construction and other development cost over-runs. A revolving loan fund, provided as part of the contract grant, was of limited use because property acquisition costs were low and because construction costs were paid from mortgage loan advances. The revolving loan fund was later converted to outright grant. All of the buildings rehabilitated under the project were financed under the Section 221 (d)(3) program.

Eleven row houses in various locations of the South End were acquired and rehabilitated under the project. Eight of the houses were acquired from the Boston Redevelopment Authority and three from private owners. The houses as rehabilitated contain a total of 50 apartments. Because FHA limited a housing project to houses or groups of houses located within one block, it was necessary to finance each house or group of houses with a separate mortgage loan. The first four houses had five apartments (the minimum under HUD/FHA regulations for a multifamily project) and each house was financed with a separate mortgage loan. The next four houses were done in two pairs with, in each case, two contiguous houses with a total of nine apartments being financed under a single project loan. The seventh project, the last, has twelve apartments and is comprised of three houses located within one block but not on contiguous lots.

The interest rate on all the mortgage loans is 3%. The loans on the first six projects are for a term of 33 years 9 months and for the seventh project 40 years. Apartments vary from efficiencies to four-bedroom apartments and rents range from \$65.00 to \$166.00 per month.

The Corporation has operated the housing projects since July 1966. The apartments have been leased to low-income families, the average family income being \$3200 per year. Seventy-two percent of the families are receiving public assistance. Sixty percent of the families are paying only a portion of the rent with the

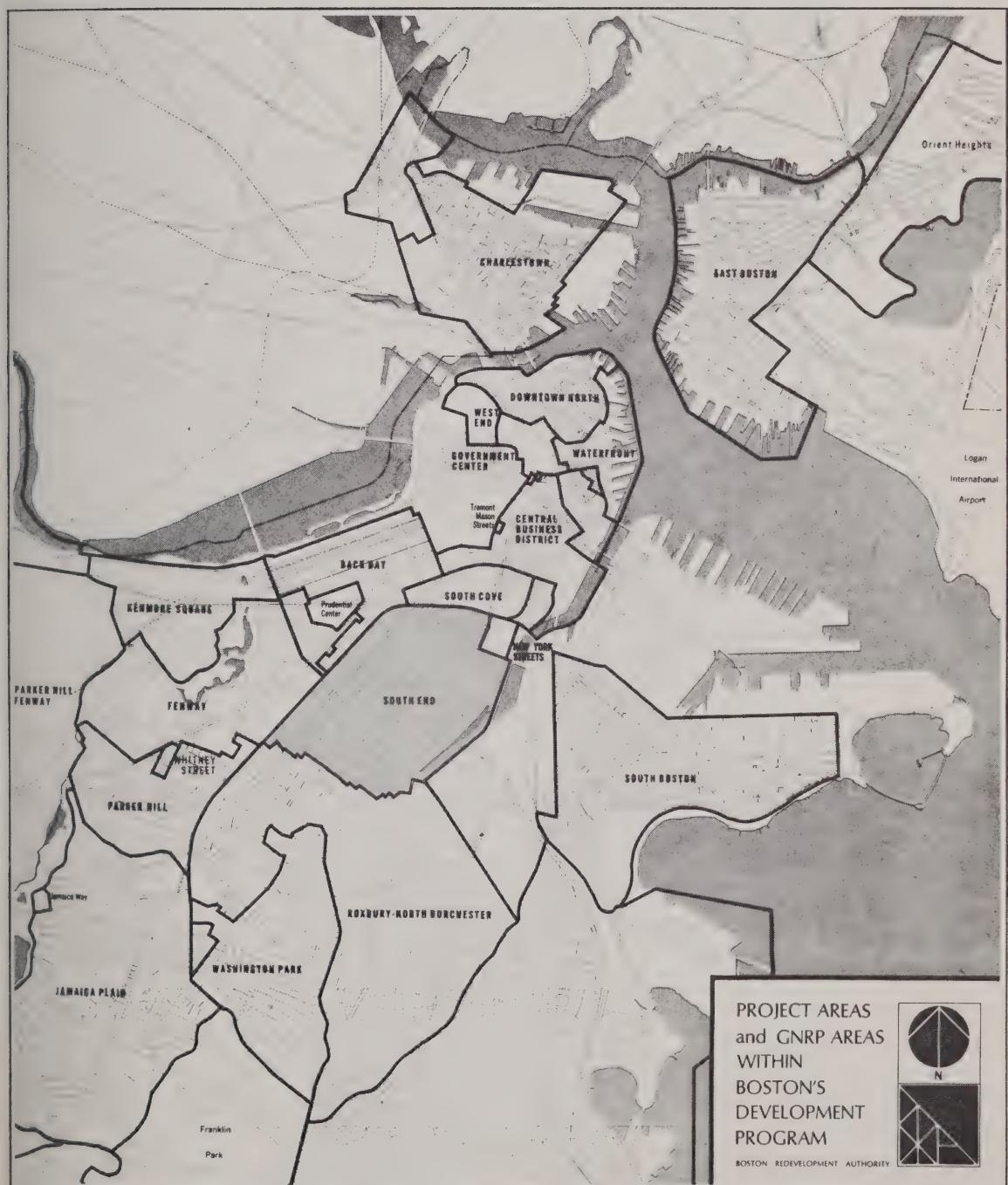


balance paid by the Boston Housing Authority (BHA) under the Leased Housing Program of Section 23 of the National Housing Act. The great majority of the families lived previously in the South End and approximately half were relocated under the Urban Renewal Plan.

SECD is now completing several additional projects beyond those included in this study project. These latter include a six-house project where the construction work is being performed

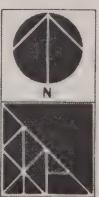
## BACKGROUND

by an independent general contractor, a two-house project which is financed with a mortgage loan pursuant to Section 221 (d)(3) but with FHA rent supplements, and three houses to be rehabilitated with loans obtained directly from the Government under the Section 312 program of the National Housing Act. These projects are an extension of the work done under this HUD study project and will be referred to from time to time in this report. These on-going ventures will permit the Corporation to test alternative methods which it could not test within the scope of this project.



PROJECT AREAS  
and GNRPs AREAS  
WITHIN  
BOSTON'S  
DEVELOPMENT  
PROGRAM

BOSTON REDEVELOPMENT AUTHORITY





## SUMMARY OF FINDINGS

Following is a summary of the findings that SECD believes to be supported by the results of the study project which are more fully explained in the body of this report:

### Rehabilitation Construction Costs and Rents

1. Rehabilitation of the South End row house into standard HUD/FHA apartments required conversion and substantial reconstruction of the houses, with construction costs ranging from \$11.20 to \$14.20 and averaging \$12.30 per gross square foot. (See Table XIII.)
2. Construction costs per apartment ranged from \$9,600 to \$13,700, the latter project having a larger percentage of three and four-bedroom apartments. (See Table XV.)
3. While construction costs were much higher than initial estimates — and initial estimates were much higher than estimates then available from the Boston Redevelopment Authority — SECD is convinced that the construction costs reported herein are reliable. Rehabilitation of the structures used could not have been accomplished to meet HUD/FHA standards at any materially lower cost — at least on the scale of this project.
4. Initially average monthly rents approved by FHA for two-bedroom apartments ranged from \$86.00 to \$116.75; comparable rents for three and four-bedroom apartments ranged from \$118.50 to \$166.00. (See Table XXV.)

## SUMMARY OF FINDINGS

### Rehabilitation Designs

1. Attractive, though small, apartments can be and were created in the houses.
2. Given the basic characteristics of existing South End row houses, and HUD/FHA's No. 950 *Minimum Property Standards for Urban Renewal Rehabilitation*, little flexibility in design was possible. Three different experienced architects produced essentially the same designs.
3. To make economic sense as low-income housing the usual single-family South End house must be converted into at least three apartments. Except in special cases, a typical floor in a South End house has about 700 square feet and can accommodate a two-bedroom apartment. Apartments of three or more bedrooms generally require the duplexing of two floors.
4. Conversion of South End row houses into FHA apartments could not be achieved without violating current zoning and building code requirements. Where it was impossible or impractical to meet these requirements, waivers or variances had to be obtained.
5. The standards of rehabilitation required for FHA multi-family housing are different in kind and quality from those appropriate for single-family homes, and SECD's experience had only limited usefulness for home owners.

## Construction Methods

1. SECD acted as its own general contractor throughout the project; this was necessary when general contractors refused the work, and in order to develop reliable cost figures.
2. Experience in the kind of work encountered in conversion of the South End house produced some economies in construction costs on later projects.
3. Because of the type and size of structure utilized in the project, innovative construction techniques were not developed.
4. Initial attempts to conserve and restore original construction were abandoned for the most part as it proved less costly to replace or cover old materials, finishes and trim, than to repair and patch them.
5. The use of local workers and unskilled trainees was not helpful in achieving lower construction costs, notwithstanding considerable efforts on the part of the Corporation. The requirement to pay prevailing wages to construction personnel made the use of unskilled workers impractical. Much of the rehabilitation of South End row houses is complicated reconstruction, which requires craftsmanship and is not suited for the training of inexperienced workers.
6. Mass buying was not practical in a project of this nature and size.

## SUMMARY OF FINDINGS

### HUD/FHA Mortgage Financing

1. Mortgage loan financing under Section 221 (d)(3) is lengthy and expensive and found to be impractical for small projects such as those developed in this study.
2. HUD/FHA mortgage loan insurance commitment processing took more than twelve months for each project after the project had been initiated. While other necessary steps in the development of a project also involved delays, the processing time required to obtain the HUD/FHA commitment became the limiting factor.
3. Both SECD and HUD/FHA underestimated the construction costs on the initial houses. This caused delays in financing the projects.
4. Since the time required was not initially appreciated or understood, scheduling of work was handicapped by the delay.
5. Organizational and processing costs to obtain HUD/FHA mortgage financing are almost as much for the small projects completed here as for projects of several hundred apartments. Administrative costs to process mortgage loan applications on the study projects far exceeded the costs allowed by HED/FHA in the mortgage loans.
6. Mortgage loans equal to 100% of development costs were not achieved until rehabilitation construction costs and financing and carrying charges could be accurately estimated on the basis of previous experience.
7. The long processing time of the HUD/FHA commitments was caused by difficulties with an experimental program, SECD's lack of experience with FHA procedures, inaccurate estimates of construction costs, problems in connection with allocations of below-market interest rate funds and FHA bureaucratic requirements.

## SUMMARY OF FINDINGS

- 8 Notwithstanding difficulties experienced, the Corporation believes HUD/FHA mortgage financing under Section 221 (d)(3) was the best financing available. Indeed it was the only HUD/FHA financing available in the South End during most of the period, so that the Corporation had no choice under the terms of the HUD grant contract.

### Housing Development

1. At the time of the inception of the project, the Corporation was the only developer using Section 221 (d)(3) financing to rehabilitate South End houses. SECD's work has not to date been followed by any widespread rehabilitation for low-income families.
2. Acquisition of tax-foreclosed properties from the City of Boston at \$1 apiece was helpful but the dilapidated condition of the houses increased rehabilitation costs.
3. While the work program planned by the Corporation following the completion of this study project is expected to provide data on South End rehabilitation using other financing methods, no other developer has been successful in achieving rehabilitation to meet HUD/FHA standards at costs so low as to result in rents which low-income families can afford to pay.

## SUMMARY OF FINDINGS

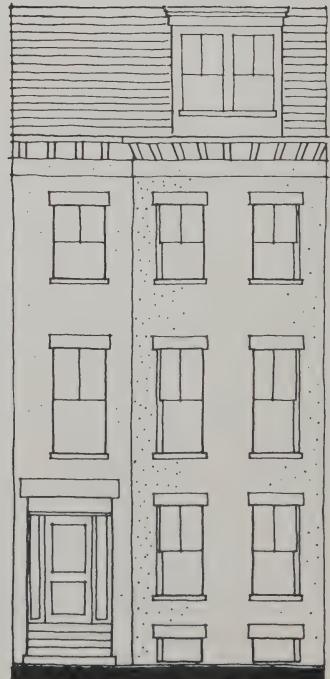
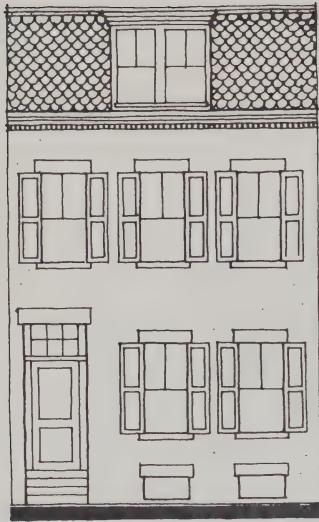
### Housing Operation and Management

1. Rehabilitation and operation of South End row houses, for occupancy by low-income families, is feasible only when most of the apartments are rented through the public housing leasing program or receive HUD/FHA rent supplements, under either of which programs the tenants pay only a portion of the rent according to the family income.
2. Operating costs, including vacancy and collection losses and management fees, are estimated to be approximately \$725 per apartment per year on the average. (See Table XXIX.)
3. On initial projects, operating costs estimated by HUD/FHA are being exceeded, so that rents will have to be increased to avoid cash losses. (See Table XXIX.)
4. Rent collection losses have occurred only as a result of a serious family problem causing the family to vacate.
5. Rents are paid on a monthly basis at a central office, mostly by check.
6. The average income of tenants in the study project is approximately \$3,200 per year. This has been made possible in part by leases to the Boston Housing Authority of approximately two-thirds of the apartments.
7. Participation of tenants in property management has been difficult to achieve, but some tenants are already involved, and an experimental management program is underway under which greater participation by tenants is being encouraged.
8. The owner of small rental projects, such as those developed under the study, must provide, with the assistance of social agencies, special services to the tenants. Very often, the owner or landlord is the first to know of a family's need for such services.

## SUMMARY OF FINDINGS

### Community Development

1. The project did not have an appreciable impact in producing upgrading either by nearby property owners, or by the South End community as a whole. This is not surprising in view of the scattered locations of the houses and the small scale of the project, not to mention the difficulties encountered.
2. Notwithstanding cooperation from the heads of the various agencies concerned, which was promised and was forthcoming, SECD's housing projects were processed in substantially the same way as other small scale conversion housing efforts, whether for profit or otherwise. Community improvements to complement and support SECD's housing rehabilitations were not provided.



# 1 PROPERTY ACQUISITION

Residential rehabilitation starts with old buildings which are worth fixing. Many individuals assume that it is cheaper to purchase old buildings and repair them than it is to build entirely new structures. This belief is often supported by an availability of old properties at low prices. One of the assumptions of this project was that the South End row houses could be acquired from the Boston Redevelopment Authority at no cost, or alternatively, that buildings could be purchased privately at very low prices. In this chapter we shall discuss the South End house, acquisition of property and relocation of families from acquired buildings.

## THE SOUTH END ROW HOUSE

The predominant residential structure in the South End of Boston is a 3, 4 or 5 story brick row house. The balance of the private residential structures in the area is made up of a few



## PROPERTY ACQUISITION

hotels, built in the last century when the area was fashionable, and approximately 45 apartment houses, all built 40 or more years ago. The map No. I indicates the extent of row house development in the South End. Of the 2,900 private residential structures in non-clearance areas in the South End, 98% are estimated to be masonry row houses. Rehabilitation in the South End means rehabilitation of this indigenous South End row house.

South End row houses were originally built as single-family dwellings, a few for the wealthy, but most for upper middle-income families, many of whom had servants. The typical South End row house is set back eight to ten feet from the sidewalk. A wide brown-stone stairway, with low ornamental iron railings on each side, leads up to a pair of exterior entrance doors. Inside a second pair of vestibule doors, is a front hallway and stairway. The stairway is a particular feature of the South End row house. It is a winder stairway which turns 90 degrees at the top and bottom of each flight. There is a straight horizontal return landing between the top of one flight and the foot of the next. A continuous handrail and balustrade follow the stairway and landings. The soffit of the stairway has a smooth, continuous surface which follows the turns of the stair. At the top a skylight in the roof provides daylight. The winder stairway is located along a party wall at one side of the house, approximately half-way between the front and rear of the house. From the entrance hallway there is a door to a main front room. This room has two curved windows in the bow front and has a cut marble mantel and ornamental grille on the opposite party wall. From the main front room there is a pair of doors leading to a main rear room. This room has two or three windows overlooking the rear garden and alley and has its own cut marble mantel and ornamental grille. On the main bedroom floor one flight up, there are four rooms off the stairway — a large front room, a large rear room and two small side rooms, one to the front and one to the rear of the stairway. The main rooms have two windows each and a marble mantel and a grille. Between the two main rooms is a double wall enclosing closets and sometimes an archway. The side rooms are small, without closets and generally of the same width as the stairway, which is approximately six or seven feet wide. The top floor is reduced in area by the mansards at the front and rear of the building or by the pitched roof. If the roof is pitched, the floor has dormer windows. While this

PROPERTY ACQUISITION





shaded areas scheduled  
for clearance and reuse

MAP NO. 1

## **South End Urban Renewal Area R-56**

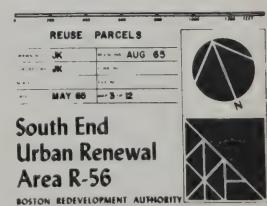


TABLE III

**PRIVATE RESIDENTIAL STRUCTURES IN THE SOUTH END  
IN NON-CLEARANCE AREAS<sup>1</sup>**

Item	Number	Need major or Extensive Repairs	No. of Housing units
Apartment houses <sup>2</sup>	45	30	900
Row houses	2,862	1,847	19,723 <sup>3</sup>
<b>TOTAL</b>	<b>2,907</b>	<b>1,877</b>	<b>20,623</b>

<sup>1</sup> Residential structures do not include hotels

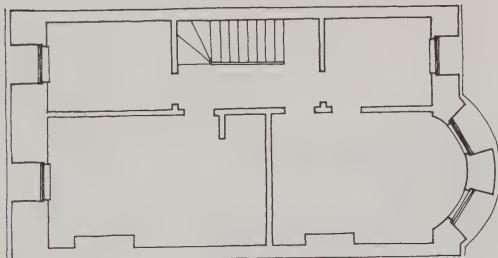
<sup>2</sup> Estimated by the Boston Redevelopment Authority

<sup>3</sup> The Boston Redevelopment Authority estimated that in 923 row house lodging houses there were 9,000 housing units.

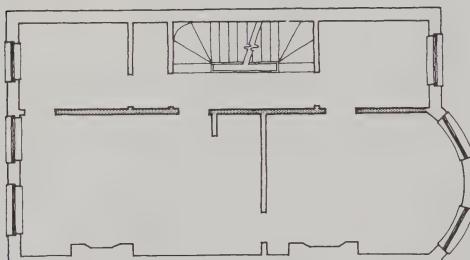
Source: BRA Loan and Grant Contract, Part I, 1964.



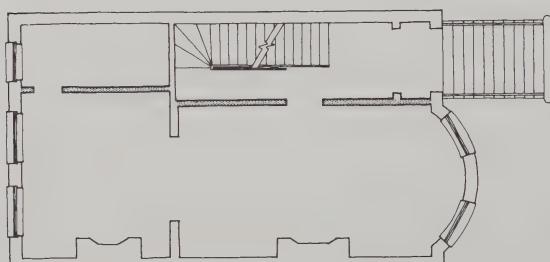
## FLOOR LAYOUTS OF HOUSE 5B BEFORE REHABILITATION



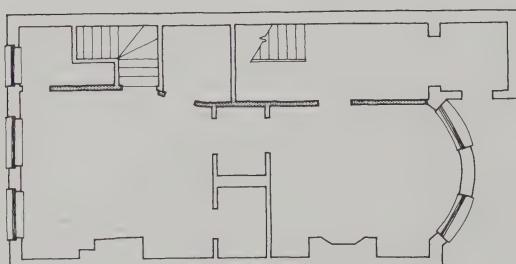
FOURTH FLOOR



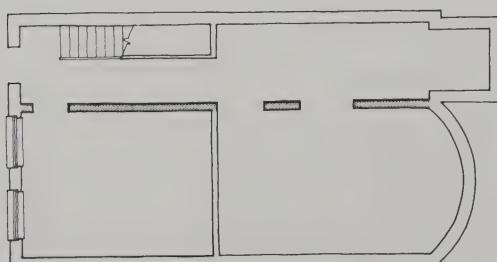
THIRD FLOOR



SECOND FLOOR



FIRST FLOOR



BASEMENT

floor has plastered walls and ceilings just as the rest of the building, it has no mantels or grilles and has plain doors and trim. The floor below the main parlor floor has an exterior door to a little vestibule under the exterior front entrance stairway. A room to the front has two curved windows and a rear room will overlook the garden. A third room or sometimes a back stairway is behind the main stairway. The main stairs terminate at this level and an enclosed straight stairway leads to the basement below. The basement level has no windows to the front, but has windows at the rear.

A feature of the South End row house is a six or eight feet difference in grade between the sidewalk at the front of the building and the grade of the rear yard. When the land was filled, the streets were made higher than adjoining land for the purpose of drainage and to provide cover for utilities. The basement may have a wood, brick or earth floor and often has the original brick oven or laundry.



There are variations in this pattern. The sketches on page 22 indicate several styles of houses. Some row houses are only 2½ stories high and measure 16 feet wide by 28 feet deep. Some of the 3½ story row houses have only a few steps leading to a single pair of exterior entrance doors on the first floor. When the first floor is only two or three feet above the sidewalk, the parlor is on the second floor. Some of the houses on the squares or main streets have six levels. These houses are 22 to 25 feet wide and as much as 42 or 44 feet deep. On the main commercial streets, the ground or street level floor, directly below the parlor floor, has frequently been converted into commercial use.

The South End row house has a substantial appearance but has construction features which are a cause for concern. Much of the South End was created by a land filling operation and the bearing capacity of the soil is uncertain. Most South End row houses rest on wooden piles which are still sound because the water table has remained above the pile cutoffs. Conceivably, some of the houses rest on slab foundations or on spread footings which go below the inorganic silt or peat layers which lie near the surface. There are frequently cracks in the exterior front or rear walls which indicate that there has been some differential settlement of the foundation. The exterior face brick on the front of the houses is laid with very tight joints and without ties or headers into the common brick back-up. Party walls are eight inches thick and often made of soft common brick. Exterior window lintels and sills are brownstone which, more often than not, is spalled and painted. Wood lintels hold up the interior brick above the window openings. Exterior windows are wood, double hung with weights and pulleys. Windows in the bows are curved. Flat roofs are tar and gravel and pitched roofs and mansards are made of slate. Flashings and gutters were originally copper.

The interior finish of South End row houses is rather elegant. Doors and windows on the main floor have six to eight inch wide fluted casings. Ceiling heights vary. The main parlor floors are anywhere from 10 to 14 feet high. Table IV indicates the ceiling heights of the project houses. The houses have wood lath and plaster ceilings and walls, and the main rooms have ornamental plaster cornices and ceiling medallions. The stairway may also have an ornamental plaster cornice on the main floors. Floor framing is 2" x 10" or 2" x 12"



TABLE IV

## CEILING HEIGHTS OF HOUSES

House	Floor				
	Basement	First	Second	Third	Fourth
1	7'10"	10'11"	10'0"	8'9"	9'2"
2	7'6"	8'7"	12'0"	8'9"	8'4"
3	8'0"	8'9"	9'11"	8'8"	8'0"
4	7'6"	8'5"	10'11"	10'2"	9'2"
5A	7'6"	8'6"	11'1"	8'11"	7'10"
5B	7'6"	8'6"	11'1"	8'11"	7'10"
6A	7'10"	8'10"	10'0"	8'8"	8'0"
6B	7'10"	8'10"	10'0"	8'8"	8'0"
7A	8'0"	8'11"	10'0"	8'0"	8'4"
7B	8'0"	9'0"	10'0"	8'1"	8'3"
7C	7'10"	13'1"	10'4"	10'1"	10'4"

## PROPERTY ACQUISITION

wood joists spanning between the party walls. At stairheads and wells, 3" and 4" thick joists are used. Floors are one inch rough boarding plus finished flooring. Wood floors are generally soft pine because carpeting was used by the original owners. Wood lath and plaster on ceilings and on party walls is fastened to wood strapping.

Each South End row house has a partition which runs from the front to the rear of the building and encloses one side of the winder stairway. This partition is a non-bearing partition because the joists span from party wall to party wall. However, in the center portion of the floors where the joists are cut off for the stairway, this partition partially supports the floors. If the foundations or supports below this partition settle or rot, major deflections occur in the middle of the floors and in the stairs. In large row houses, 24 or 25 feet wide, the partition along the stair has a foundation similar to the party walls and is a load bearing partition. Frequently, wood framing and joists supporting the basement floor have rotted and major settlements have occurred in that floor.

The majority of South End row houses have been divided into one and two-room apartments, often with a shared bath



located in a rear side room. Many of the rooms and some of the hallways have washstands or sinks, a carry-over from more crowded days fifty years ago. Some of the houses are still heated by individual stoves. Oil-fired steam systems with radiators are the general rule today. Many rooms have gas hot plates for cooking, sometimes located in closets. Most row houses had gas lighting with overhead ceiling lights in each room and an occasional bracket light on the wall. Many of the houses have only a scattering of electric wall receptacles and many are served by an old 35 ampere electric service. The water service from the street main is generally a three quarter inch lead or galvanized pipe and the sewer is a four inch line to the street or possibly to the public alley at the rear of the property. The public sewers are frequently brick sewers in disrepair. The South End has been plagued for years by an inadequate sewer system which is subject to flooding after heavy rains and when there are flood tides.

Ten years ago row houses in bad condition could be purchased for less than \$3,000 per house. Today, houses in bad condition but structurally sound and in good neighborhoods, sell from \$10,000 to \$18,000 per house. A row house can be purchased now for less than \$7,500 only when the house is in very bad condition and is located in a blighted neighborhood. Conditions which would severely depress the price of a house are structural settlement including the failure of the exterior masonry walls, extensive damage by fire, or extensive deterioration and rot of the interior finishes and floor caused by prolonged weather exposure. Blighted streets have open lots, where the buildings have been removed, or undesirable commercial or industrial uses. Structural failures of South End row houses are sometimes so severe as to render the building useless. In the cases where the exterior masonry walls have delaminated or where only sections of these walls have failed, the walls can be repaired. Party or side walls carry the floor loads and are generally in fair condition. Except where the house has been vacant or adjoins an empty lot, party walls are protected and are not affected by wide variations of outside temperatures. Fires in South End row houses are frequently very serious. When the wood stairway, floors and roof are extensively damaged, repair is not justified. Few owners carry 100% fire insurance coverage or have the funds to restore a South End house badly damaged by fire. Inadequate drainage, ground water, lack of light and ventilation cause extensive damage by moisture

PROPERTY ACQUISITION



and rot in empty houses. Vacant buildings are vandalized and copper and cast iron are ripped out of the buildings to be sold to the junk dealer for a pittance. One of the sorrows of the South End house is that once the fancy trim and ornamentation is deteriorated or broken, its repair is prohibitively expensive.

## SELECTION OF PROPERTIES

One of the advantages which SECD wished to employ in the project was the availability of properties from the City of Boston at no cost. When the project commenced in 1964, the City of Boston owned 65 row houses in the South End. These properties had been acquired by the City through foreclosure for unpaid real estate taxes and other municipal liens. SECD asked the Boston Redevelopment Authority (BRA) to supply a list of City owned properties and to make recommendations with respect to the properties which the Authority's staff would suggest be included in the project. The BRA staff recommended a number of properties in various areas of the South End, both



## PROPERTY ACQUISITION

in white and non-white sections. The list included small 16 foot wide houses as well as larger 20 or 21 foot wide houses. All the houses were in bad condition. Some of the houses had been severely damaged by water caused by roof leaks or faulty plumbing which had gone uncorrected for years. With the exception of one house, plumbing, heating and electrical systems were inoperative and in most cases vandalized. Cast iron radiators and stacks and copper gutters and downspouts had been ripped from the houses. A number of houses had deflections of 2 to 2½ inches in the floors and stairways. House No. 1 had had a fire which had burned out two flights of the stairway and a major portion of the roof. The house had been open to the weather for years. The front exterior wall had delaminated and the City of Boston, for more than twenty-five years, had been trying to enforce corrections of code violations. House No. 2 had severe deflections in the floors. House No. 3 had been boarded up and vacant for years. It was occupied by ten or twelve wild dogs who had access to the building through a rear window. House No. 4 had major failures in the rear exterior masonry wall. All the houses recommended to the corporation had broken windows and doors and most were boarded up. A boarded up house is a mixed blessing, because boarding the windows and doors denies sunlight and ventilation which reduces deterioration caused by moisture and variations in temperature.

In accordance with the grant contract, SECD was to consult with the local HUD/FHA insuring office prior to selecting any properties for rehabilitation. At an initial conference, officials of HUD/FHA suggested that SECD submit locations, typical floor layouts and estimated rents of a few specific properties. SECD selected five of the City owned properties located in different areas of the South End which were among the list recommended by the BRA and in the best condition. Floor plans and proposed rents for these properties were submitted to HUD/FHA. A sixth house which was privately owned and recommended to SECD by BRA, was also included but later withdrawn when it could not be purchased. All the houses selected were vacant thereby avoiding the need to relocate families. FHA approved the locations of the five properties one month later and suggested that SECD file applications for mortgage insurance commitments. SECD proceeded to request the five properties from the BRA and the properties were acquired two months later. SECD acquired subsequently

PROPERTY ACQUISITION





location of tax-title  
houses in  
non-clearance areas  
in 1964

MAP NO. 2

additional houses in the locations of the initial houses as planned. Six other houses were acquired for the project, three from the BRA and three from private owners. Table V indicates the houses acquired by SECD, their purchase price, size and condition.

#### ACQUISITIONS FROM BOSTON REDEVELOPMENT AUTHORITY

Acquisition of properties from the BRA required several steps. After SECD had submitted its request, BRA approved the request and asked the Real Property Department of the City of Boston to release the property to the BRA. A twelve page Disposition Agreement between the Authority and SECD was then prepared. This agreement set forth the conditions under which the



## PROPERTY ACQUISITION

TABLE V  
HOUSES PURCHASED

House	From whom acquired	Date acquired	Purchase Price	Building width/depth	Estimated years vacant before acquisition	Building Condition structural	Building Condition interior finish	Building Condition mechanical <sup>1</sup>
1	BRA	Feb. 65	0	21 x 35	5	bad	bad	none
2	BRA	Feb. 65	0	23 x 38	1	fair	fair	bad
3	BRA	Feb. 65	0	21 x 36.5	5	fair	bad	none
4	BRA	Feb. 65	0	21 x 40	2	bad	bad	none
5A	Private	Apr. 65	\$9,010	20 x 37.5	0	good	bad	fair
5B	BRA	Feb. 65	0	20 x 37.5	1/2	good	fair	bad
6A	Private	Apr. 65	\$2,120	21 x 36.5	1/2	fair	bad	bad
6B	Private	June 65	\$4,515	21 x 36.5	0	fair	bad	bad
7A	BRA	May 67	0	21 x 36.5	0	fair	fair	bad
7B	BRA	May 67	0	21 x 36.5	5	fair	bad	none
7C	BRA	May 67	0	25 x 44	3	fair	bad	none

<sup>1</sup>No mechanical reused in any building.

properties were to be conveyed to the SECD. After the Real Property Department had released the properties to the BRA, the BRA's Board voted the transfer of the properties, the Disposition Agreement was signed and the properties conveyed to the Corporation.

There were protracted negotiations on the terms of the first Disposition Agreement. BRA's staff wanted to include in the agreement a list of maximum rents for the study project. In view of the experimental nature of the project and SECD's lack of information about rehabilitation construction costs and mortgage financing for the projects, SECD could not accept rent limits in the agreement which it did not know it could meet. SECD did agree that rents during the three year period immediately following conveyance would be "so fixed as to make tenancy, subject to the costs of operation and maintenance, feasible to persons of low income living in similar or comparable dwelling units in similar or comparable neighborhoods".

Initial drafts of the Disposition Agreement included a number of conditions precedent to conveyance to SECD. Final rehabilitation plans were to be prepared and approved by the Authority, schedules for the improvements established, contractors selected and performance bonds obtained, all prior to conveyance. While this is a normal practice where the improvements are new buildings and only land is being conveyed, it was not appropriate for an experimental rehabilitation project. It was necessary to investigate the houses and take measurements prior to developing drawings. This entailed removing some of the existing interior finishes and cleaning out "mountains" of old furniture and debris so that inspections of the houses could be made. For these reasons, the Disposition Agreement was redrawn to provide an early conveyance to SECD and to include time schedules for the preparation and submission of drawings and specifications and the construction of the improvements.

The Disposition Agreement included covenants running with the land, which required that the property be used in conformity with the Urban Renewal Plan, that preference be given in the selection of tenants to persons displaced in the Urban Renewal area, and that SECD not discriminate in its use or occupancy of the property. The first two covenants were for a term of the Plan, or forty years, while the third was for a period of one hundred years.

## PROPERTY ACQUISITION



Today, SECD would recommend that, where a developer has experience and is familiar with the proposed construction of South End houses, formal conveyance of the property be delayed until the developer has prepared plans and specifications, received approvals and arranged for mortgage financing. Conveyance of the properties would then take place just before construction begins. This would relieve the developer of a number of holding costs such as real estate taxes, fire and liability insurance premiums and costs associated with securing and watching the property. In addition, the public agency should remove trash and debris from the building and the site, just as it prepares sites on which new buildings are to be constructed.

An illustration of the difficulties which are encountered in holding vacant buildings for extended periods of time, awaiting financing or approvals, is a rehabilitation project attempted

by the Boston Housing Authority (BHA) in the Highland Park area of Boston. A group of brick row houses, somewhat similar to South End row houses, were acquired by the BHA, measured, and then boarded up. Lengthy negotiations then followed over the design of the apartments and development costs. Meanwhile, the houses were badly vandalized and riddled by fires. Two years later, the BHA had to abandon the project because the houses had been so badly damaged and the costs of rehabilitation found so high.

Acquisition of derelict and abandoned buildings in central cities invariably involves problems of title. SECD encountered title problems in connection with properties acquired from the BRA as well as with those acquired from private owners. Titles had to be clear so that the Corporation could obtain title insurance as required by HUD/FHA. In the case of one of the houses conveyed to SECD by the BRA, a previous mortgagee had not been properly notified when the building was foreclosed by the City. SECD accepted the title from the Authority and then spent ten months chasing the former mortgagee and eventually obtained a grant and release deed on the payment of \$191. In another case, the City's foreclosure proceedings had not discharged a previous lien and the possible claimant could not be found. In order to clear the title, the BRA had to acquire the property under eminent domain. Unfortunately, the Authority's proceedings were not complete and it was necessary, after some delay, to retake the property and then convey it to SECD. There was a federal tax lien on one of the properties which SECD subsequently acquired from the BRA. Although this cost SECD several hundred dollars, it was more expeditious to pay this sum than ask the BRA to clear the title.

#### ACQUISITIONS FROM PRIVATE OWNERS

SECD acquired three houses from private owners for the purpose of enlarging its holdings in neighborhoods where it had acquired a house from the BRA or to assemble two contiguous houses in order to rehabilitate more than one house at a time. The first property acquired from a private owner was next door to one of the houses acquired from the BRA. The other two were a pair of houses near one of the houses initially acquired from the BRA. The first

## PROPERTY ACQUISITION

house was occupied when the purchase and sale agreement was signed. The gross rental income from the house at the time it was acquired was just about equal to the gross rent that the house produced after it had been completely rehabilitated and rented by SECD. The better condition of this house had little effect on rehabilitation costs because it was necessary, as described later, to change the interior arrangement of the house. Of the other two houses purchased from private owners, one had had a severe fire, the other had no central heat and was much abused. Both were in bad condition. Real estate taxes had not been paid on the properties for several years. The Corporation discovered that in two of the cases the City of Boston had instituted tax-foreclosure proceedings against the property and it was necessary for the owner to redeem the property prior to conveying it to SECD.

Many things were learned in the process of acquiring properties from private owners. It was discovered that a real estate agent is useful in locating owners and consummating a sale, but that the primary decision as to whether a property should be purchased and at what price must be made by the developer, based upon his judgment of the costs of the repairs. This is particularly true where properties are in bad condition and rehabilitation costs are high. Absentee owners of a property in blighted areas are hard to locate. If the owner is earning a return on his investment, he is not anxious to sell. An offer to buy will often cause an owner to set an excessive price on the property. The owner may suspect that the buyer is unfamiliar with the prices in the area or that the buyer has a special reason to buy the particular house, and is therefore likely to pay a high price. SECD did not use "straws". It found that it had an equally good chance of acquiring a property if the owner was told of the Corporation's interest and program. It was found however, that the Corporation had to move quickly, pay cash and accept a 30 or 60 day purchase and sale agreement. Occupied buildings in relatively poor condition which the Corporation purchased or considered purchasing were selling for approximately two times gross annual earnings.

SECD did not always wait to complete the acquisition of property prior to preparing architectural working drawings and filing applications with HUD/FHA for mortgage loan insurance commitments. However, there are risks in proceeding with a housing project when the title to the property is known to be defective because

HUD/FHA will not insure a mortgage loan without title insurance. None of the projects was delayed on account of acquisition difficulties but this was only because HUD/FHA processing took as long as it did. If a large scale rehabilitation effort were undertaken and HUD/FHA processing time shortened, difficulties in clearing titles and acquiring properties might cause delays.

A factor which influences the price of South End houses is the legally registered use. The registered use is taken from the last major building permit application for work on the house. These applications are often filled out carelessly and hardly constitute an accurate record. Nevertheless, they are significant. If the registered use is for fewer apartments than exist, there may be difficulties for a new owner. If the owner takes out a building permit to renovate four existing apartments in a house which was last registered as a single family dwelling, the work is classified as a change of occupancy and the owner is required to make the building comply with most of the provisions applicable to post code buildings of that size.

Vacant buildings which have been damaged by fire or some similar disaster can generally be purchased. The difficulty is to find the owner. Frequently, the consent of multiple owners is required. With the advent of urban renewal in the South End, the price of vacant row houses began to rise. Properties which sold for as low as \$2,000 or \$3,000 in 1960 sold for three and four times that amount in 1964 and 1965. Middle and upper income families were not disturbed when they had to pay \$10,000 to \$15,000 for a property. A difficulty in any enlarged low-income housing effort in the South End is the vanishing supply of low-cost properties. A large rehabilitation housing program would almost certainly have to depend upon acquisition of properties by the BRA for conveyance to a non-profit and other developers. These properties might have to be "written down" in value if low rents are to be achieved.

## ADVANTAGE OF LOW-COST PROPERTY

The question arose in the course of the project as to whether the acquisition of low-cost properties in bad condition resulted in lower development costs of the housing. It was suggested by

## PROPERTY ACQUISITION

some that SECD acquire buildings in better condition in an effort to reduce rehabilitation construction costs. However, experience of the study indicates that conversion of South End row houses into standard FHA apartments requires the complete rearrangement and replacement of most interior partitions and finishes together with the installation of new kitchens and baths and the installation of new mechanical services. Having some of these items in useable condition would result in only nominal savings in overall costs. If exterior brick walls, exterior trim, window frames, wood floors, and plaster ceilings and walls are in good condition, there would be savings, but anything eighty years old will require some repair. It is estimated that it cost approximately \$4,000 to \$6,000 to repair the structural failures in the exterior masonry walls, exterior trim, roof boarding and floors of the initial houses.

## FAMILY RELOCATION

It was a policy of SECD to select vacant buildings in order to add to the housing stock and to avoid relocating families. Of the eight properties acquired from the BRA, all were vacant when conveyed to SECD. Of the three properties acquired by SECD from private owners, two were occupied when the purchase and sale agreements were signed. With one exception, these tenants were transient, single individuals. The owner of the property, who had numerous other houses in the South End, had no difficulty in relocating single tenants. There was one large family which remained in the building after SECD acquired the property. This household included a father, and mother and two small children, one of whom was very ill, together with the father's sister and her four small children. This nine-person household was living in a two-room apartment. With the aid of social agencies, SECD managed to relocate the families successfully.

When a non-profit housing corporation buys occupied low cost properties, it finds itself in a dilemma. There are advantages in buying occupied buildings because vandalism is substantially reduced, and income is earned while the construction drawings are prepared and arrangements made for mortgage financing. Troubles begin when the non-profit organization finds itself in the "slum landlord business". Major repairs become necessary and the

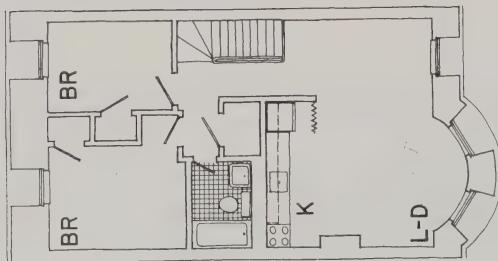
corporation will not wish to undertake these because the work will be lost when the whole building is rehabilitated. On the other hand, a non-profit corporation can hardly continue to operate a building which is dangerous or a hazard to health. In a development subsequent to the study project, SECD bought two properties, which had broken sewers and raw sewerage in the basement of the house. In both cases SECD had no choice but to relocate the families from the buildings.

Ideally, a rehabilitation program for low-income families would permit the families to move back into their original apartments if they so desired. What happens, however, is that the families are frequently too large by FHA standards for the renovated apartment and alternative apartments of adequate size are not available within the same development. Any relocation program will result in families deciding to move to other areas or seek different types of housing. Predicating a rehabilitation program on the housing needs of the families occupying the apartments at the outset of the program can be unwise.

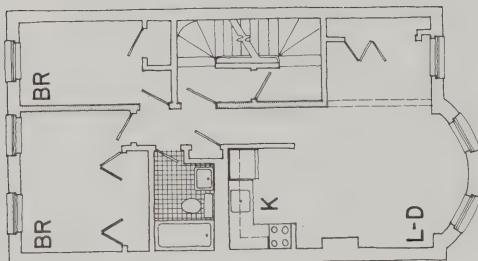
## CRITERIA FOR THE SELECTION OF PROPERTIES

The study project was intended to analyze criteria which might be used in the selection of property. However, there is little that can be reported with respect to such criteria because so few properties were purchased for the project, and those that were purchased were selected on the basis of a limited choice. Only three properties were purchased from private owners and the primary criteria for selecting these properties was their location in relation to properties already obtained. The tax-foreclosed properties were selected on the basis of condition, structural soundness and because they were vacant.

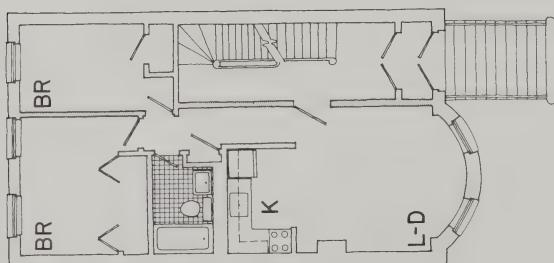
## FLOOR LAYOUTS OF HOUSE 5B AFTER REHABILITATION



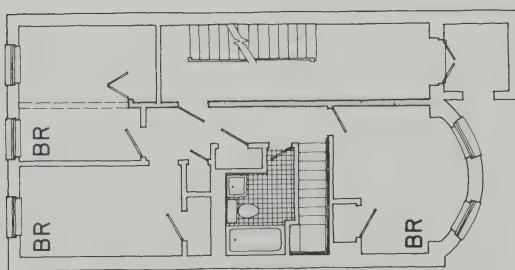
FOURTH FLOOR



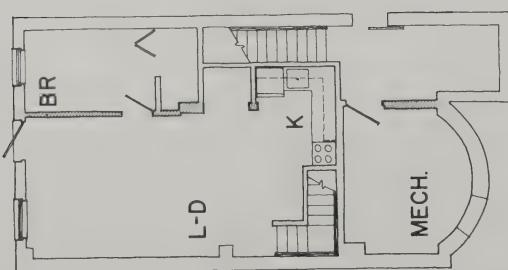
THIRD FLOOR



SECOND FLOOR



FIRST FLOOR



BASEMENT

# 2

## BUILDING STANDARDS AND DESIGNS

A successful private rental housing project must comply with the law, should qualify for adequate mortgage financing and should satisfy the needs of its occupants. Where the occupants are low-income families, needs include not only usefulness but low rents, and these depend upon the cost of development and operation. A rehabilitation project can be expected to have some difficulties meeting all of these requirements. In this chapter we shall review some of the problems which were encountered in meeting the requirements of municipal and state codes, in working out designs which met FHA's architectural requirements, and in designing units for low income families within the constraints of the South End row house.

### BUILDING LAW REQUIREMENTS

Residential rehabilitation will inevitably encounter problems with building codes. There are two primary reasons. The first is that codes are written with new construction in mind and the second is that codes are made increasingly more stringent and buildings built many years ago will inevitably fail to meet contemporary requirements. New buildings are designed to comply with code requirements and while there may be problems associated with construction costs or the use of new techniques and materials, these can be resolved during the design phase of the project's development. Making an existing building comply with current codes is a different matter.

Codes generally prescribe uniform standards for all structures but have special provisions defining the application of the code to precode buildings. The current Boston building code was enacted in 1938 and substantially amended in 1943. The code specifies a number of conditions under which a precode building must meet current code requirements. If alterations or repairs costing in excess of fifty percent of the physical value of the building are made within a period of twelve months, the building must be made to conform to requirements of the code for post code buildings. When the occupancy of a precode building is changed, the building commissioner can require

that a precode building be made to conform with the provisions of the code which eliminate any increased hazard of occupancy. A precode building which is enlarged in floor area or in number of stories must be made to conform throughout the entire building to the requirements of the code with respect to egress and fire protection. Under the powers and duties of the fire commissioner, the code has the following two provisions. 1. "Every building of which the exits are insufficient shall be provided with exits satisfactory to the commissioner; and every building shall be vacated forthwith on order of the commissioner, with the approval of the Mayor." 2. "Any requirement necessary for the strength or stability of a precode or proposed structure or for the safety of the occupants thereof, not specifically covered by this code, shall be determined by the commissioner subject to appeal to Board of Appeals." The building code has therefore wide application to the type of renovation which SECD planned under the project and it was necessary to resolve questions of interpretation of the code and to determine how the code would be applied to the eighty-year-old South End row houses.

Building code requirements vary with the type of structure and its use. A South End row house is classified in the Boston Building Code as Type IV construction. Buildings of Type IV construction have "exterior bearing walls of masonry and other construction of incombustible materials of four hour fire resistive construction and their frames, floors and roofs may be of wood." On a number of counts, it is totally impractical to attempt to make a South End row house meet all the requirements of the Code. In fact, the building code prohibits the construction of residential buildings of Type IV construction of more than three stories in height. The code requires that all buildings of Type IV construction more than three stories high have a two hour fire-resistive enclosure about the stairway. This requirement is not only impractical in a South End house, but it is inconsistent with the general one hour fire resistive construction of the interior framing of the building. The code requires that party walls in Type IV construction extend through the roof not less than twelve inches. A common, uninterrupted roof line is a standard feature of a South End row house. Party walls are constructed up to the underside of the roof boards. Rebuilding party walls and roof is not practical and the Building Department has accepted these features as originally constructed. The code



further requires that bearing party walls of masonry shall be solid not less than twelve inches thick. Party walls in South End houses are generally eight inches thick. It is a common practice in South End houses to corbel out chimneys from the party walls and this is not permitted under the code on walls of less than twelve inches thick. In addition, many flues are constructed with a four inch chase into the party wall. This is a clear violation of the code. Whenever SECD removed chimneys and exposed a four inch chase in the party wall, this chase was filled to restore the eight inch wall. Some of the basements and top floors of the South End row houses violated the eight foot ceiling height requirement of the code. Another feature of South End row house construction which would be frowned on today is the use of wood lintels to hold up the inside four inches of brick work over window openings in exterior masonry walls.

Building code requirements vary, not only with the type of building but with the occupancy. The code establishes two kinds of residential occupancy. The first or Group I occupancy is "limited habitations and small dwellings" which includes dwellings accommodating not more than three families, nor more than two families



above the first story and dormitories, lodging houses, clubs and convents with sleeping accommodations for less than ten persons. The second is Group H occupancy for "unlimited habitations and large dwellings", including hotels, dormitories, lodging houses, clubs and convents with sleeping accommodations for ten or more persons or more than three families, or for more than two families above the first story, and without kitchens in the individual apartments and apartment houses accommodating more than three families, or more than two families above the first floor, and with kitchens in the individual apartments. The South End row house will generally comply with most of the requirements for Group I occupancy. The basement ceiling in a Group I occupancy building must be a one hour fire resistive ceiling and in buildings of more than three stories in height, there must be two stairways, one of which is to be enclosed. Automatic sprinklers are not required in Group I occupancy buildings unless the building is seven or more stories high. In Group H occupancy buildings, partitions separating adjoining apartments must be of one hour fire-resistive construction and walls of corridors which serve as common exits from two or more apartments must have a one hour fire-resistive construction. Each apartment has to be served by two remote exits. In buildings more than three stories high, there must be a two hour separation of the boiler room from the rest of

the building and automatic sprinklers must be installed in cellars, basements, storerooms, workrooms, shops and kitchens.

As indicated above, many requirements of the Boston Building Code hinge on whether a building is three or more stories high. The numbering of the stories in a South End row house can be confusing. Frequently, the story at the head of the exterior entrance stairway is considered the first story. This floor may be six to eight feet above the sidewalk. This definition of the first story sometimes allows the building to be classified Group I occupancy rather than in Group H. As pointed out, this can be significant. The building department seems to follow a practice of classifying three and a half story row houses as three story buildings where the occupancy is Group I. Where the building has four or more apartments, and is therefore Group H occupancy, those same three and a half story row houses are classified as four story buildings.

Varying interpretations of the code result when reasonable people attempt to enforce the spirit if not the letter of the code. The problem for the housing developer is that interpretations of the code will vary because different officials will interpret the code differently at different times.

SECD met with the Building Commissioner to discuss building code requirements on several occasions. Existing plaster in South End houses is installed on wood lath over either wood strapping or studs. This is not one hour fire resistive construction. The Commissioner advised the corporation that existing plaster ceilings in good condition would not have to be replaced, but that he would require new plaster ceilings in all basements. Wood lath and plaster enclosing the stairway would have to be removed and replaced with new perforated rock lath or wire lath and plaster. An alternative which was not adopted by the SECD was to apply new wire lath and plaster over the existing wood lath and plaster. Because the initial projects had five apartments in each house and were therefore Group H occupancy, sprinklers were installed in the heater rooms, basements and kitchens. In consultation with officials of the Building Department, a two-inch new combination water service was approved to serve both domestic water supply and the sprinkler system. The sprinkler system covered several zones of the building and had a limited number of heads zone.

Water pressure in the South End generally exceeds 65 pounds per square inch.



An item discussed with the Building Commissioner was the use of horizontal egress balconies rather than fire escapes to the ground. Balconies are constructed on the outside of the buildings and connect a window of one house to the first window beyond the party wall on the next house. South End residents prefer the appearance of balconies to that of fire escapes and feel more secure with balconies from thieves and vandals. The Commissioner advised the Corporation that he would not sanction horizontal egress balconies if there were not legal arrangements between SECD and the adjoining property owners. One can find in the South End, horizontal balconies connected to windows that are boarded up. There are situations where buildings have been demolished and the fire balconies are simply cut off. SECD discussed horizontal balconies with several of its adjoining owners and found that these owners did not wish to get involved with legal arrangements. It is a common practice to install horizontal balconies by mutual

consent and formal agreements are a rarity. Because SECD could not work out formal arrangements with adjoining property owners, it decided that at least on the initial project fire escapes leading to the ground at the rear of the building would be installed.

Application of building codes to precode buildings often produces inconsistencies between objectives and achievements. Two examples follow. The code required that "openings for doorways or windows under or within five feet from a fire escape... shall be protected by automatic-closing Class B fire doors or fire windows." Secondary egress in most South End buildings is through a rear window onto a fire escape or horizontal fire balcony. The window is normally wood with clear glass. The provision for fire windows is intended to protect a person walking along the fire escape from flames coming from within the building through a window and making passage along the fire escape impossible. While this provision seems logical to the safety engineer, it is not so considered by most South End residents. The residents view the situation from inside the building. They fear that there will be a fire and that they will not be able to get through the window to safety. Fire windows are heavy metal windows with an automatic self-closing device. The window might be difficult to open and the occupant unable to break through the wire glass. Fire windows are considered ugly and many people, particularly the elderly, find wire glass oppressive. It is obvious that safety provisions of codes mean different things to different people. A serious fire in Boston in 1965 called attention to the problem of fire windows at fire escapes and after considerable discussion in the newspapers and elsewhere, the Building Commissioner began to enforce the requirement for fire windows. Within two or three months, four or five hundred cases were before the Board of Appeals. The Board eventually granted relief to some 10 or 15 applicants, among whom SECD was one, and the Building Department thereafter revised its policy.

Another example is the exterior front doors of South End row houses. A perfectly understandable requirement of the code is that egress doors swing in the path of egress. This is a standard requirement which gets into difficulties with the South End row house. The main entrance doors are located directly at the head of the outside stairway. A pair of entrance doors swing inward as might be expected in a single family dwelling. If the door swings outward, a



person going out through the doors has to step down immediately beyond the threshold of the door. This is dangerous and not expected by the average person. Further, a person coming up the stairs has to stand several steps below the threshold of the door and pull the entrance door toward himself. This is not only inconvenient but dangerous, particularly for the elderly. The Building Department plan examiners recognized these conflicts and did not insist that the doors be changed. SECD overcame the problem by generally using the inside vestibule doors as exterior doors, and these could swing out with safety.

Plans for the first four projects were eventually filed with the Building Departments with the applications for building permits. The designs were approved with the following exceptions: a) The use of the winder stair was prohibited; b) Stair enclosures were required to be of two hour fire resistive construction; c) Windows at or within five feet of fire escapes or exterior horizontal balconies were required to be Class B fire windows; d) Egress stairways and corridors were required to be three feet six inches wide.

Any practical scheme for rehabilitating a South End row house would contemplate the reuse of the winder stairs. Reconstruction of the stairs would be both impractical and prohibitively

expensive. The requirement for fire windows at fire escapes has been discussed. The two hour enclosure of the stairway, while required by the code, would be completely inconsistent with the general one hour fire resistive construction of the building. This enclosure would have to be made of incombustible material and would add considerably to the weight on the building. The three foot six inch wide stairway was required under the general powers of the Commissioner and was intended to enforce State building regulations which are more stringent than those of the City of Boston. The Boston code requires that corridors and stairways in Group H buildings be not less than 36 inches wide. The typical winder stair and landing in a South End house is a nominal 36 inches. The application of the State regulation to existing buildings seemed erroneous. The title of the State regulation reads as follows: "General Regulations for All Buildings Herein After Erected, and for Existing Buildings Where Practical and the Use of the Buildings—." The specific regulation reads as follows: "In buildings hereinafter erected, no designated egress door, stair or passageway leading directly to the outside, shall be less than three foot six inches in width." A corridor three foot six inches wide was considered adequate egress for 75 people,



## BUILDING STANDARDS AND DESIGNS

many more than the 12 to 15 people who would be living in a South End row house. The corporation appealed all four of these requirements to the Board of Appeals and was granted relief.

When drawings and applications for building permits were filed for the fifth and sixth projects, these same items were cited together with two additional ones: 1 A cross connection between the domestic water and sprinkler system was prohibited, and 2 An outside standpipe was required. While the building code does have a provision that water for industrial uses and fire extinguishing apparatus must be independent of the supply of sanitary water, it also allows in situations where sprinklers were not mandatory that systems of sprinklers containing 25 or less heads can be taken from the domestic water supply. Health was not the issue, only capacity, and this had been resolved earlier with the Department. The requirement for an outside standpipe was unreasonable in view of the size of the building. SECD went to the Board of Appeals and was granted relief on all six counts. No appeal was required on the seventh project because the drawings were approved as submitted. A new Commissioner and other officials of the Building Department had become familiar with the type of work which SECD was doing and were satisfied that within practical limits, the rehabilitations were complying with the intent of the code. The kind of rehabilitation which the corporation was doing was more thorough than any being done in the South End, and to require more extensive compliance with code would be a deterrent not only to SECD but to other property owners in the South End who intend to improve their property in conjunction with urban renewal of the area.

In addition to complying with the building code, there are zoning regulations. Because the Corporation was not enlarging the buildings, no significant problems presented themselves in conjunction with floor area limits, height of buildings, setbacks, front and rear yards and usable open space. Existing conditions were accepted. Table VI indicates some of the conditions. Off-street parking was not provided because yards were too small and access very limited. Parking in the rear yards of South End houses is generally impractical. The alleys are often only ten feet wide and have ninety degree turns. Use of rear yards for parking would result in violations of minimum open space requirements. The zoning administrator followed a practice that where there was no increase in non-conformity with respect to parking, parking

TABLE VI  
ZONING STANDARDS OF COMPLETED HOUSES

House	Apts.	Gross		Floor Area ratio	Private	
		Floor Area in sq. ft. <sup>1</sup>	Lot Area in sq. ft.		Open Space per apt. in sq. ft.	Parking
1	5	3657	1470	2.49	145	none
2	5	4188	1543	2.71	132	none
3	5	3662	1951	1.88	236	none
4	5	4040	2079	1.94	247	none
5A	5	3490	1346	2.59	150	none
5B	4	3490	1347	2.59	120	none
6A	4	3835	1898	2.02	282	none
6B	5	3765	1916	1.98	229	none
7A	3	3710	1986	1.87	405	none
7B	4	3710	2022	1.84	313	none
7C	5	5435	2544	2.13	281	none

<sup>1</sup>Does not include mechanical equipment areas.

was not required if none existed. The occupancy change in House 1 was the conversion of a thirteen room lodging house into five apartments. On the basis that each two lodging rooms is equivalent to an apartment, the new use did not increase the non-conformity. No parking was required and the project was approved for zoning. Houses 2, 3 and 4 involved the conversions of a 4-apartment house into a 5-apartment house. Because this involved an increase in the non-conformity, the projects were ruled in violation of the zoning regulations. For these three projects, SECD sought relief from the Zoning Board of Appeals. The BRA supported the appeal. Relief was granted. All the remaining projects were approved for zoning on the basis that there was no increase in non-conformity, and no parking was required.

The time required to process drawings through the BRA and through the Building Department is indicated in Table VII.

## BUILDING STANDARDS AND DESIGNS

TABLE VII

## APPROVAL OF DRAWINGS BY THE CITY OF BOSTON

	DRAWINGS TO BRA		DRAWINGS TO CITY		ZONING BOARD OF APPEALS		BOARD OF APPEALS	PERMIT
House	submitted	approved	submitted	rejected	filed	approved	filed	issued
1	Apr. 65	June 65	Apr. 65	May 65	—	—	May 65	Aug. 65
2	Apr. 65	June 65	Apr. 65	May 65	May 65	Jul. 65	Jul. 65	Aug. 65
3	Apr. 65	June 65	Apr. 65	May 65	May 65	Jul. 65	Jul. 65	Aug. 65
4.	Apr. 65	June 65	Apr. 65	May 65	May 65	Jul. 65	Jul. 65	Aug. 65
5A	Jan. 66	Jan. 66	Feb. 66	Mar. 66	—	—	Apr. 66	Jul. 66
5B	Jan. 66	Jan. 66	Feb. 66	Mar. 66	—	—	Apr. 66	Jul. 66
6A	Mar. 66	Mar. 66	Mar. 66	June 66	—	—	Aug. 66	Nov. 66
6B	Mar. 66	Mar. 66	Mar. 66	June 66	—	—	Aug. 66	Nov. 66
7A	Mar. 67	Apr. 67	Apr. 67	—	—	—	—	Sep. 67 <sup>1</sup>
7B	Mar. 67	Apr. 67	Apr. 67	—	—	—	—	Sep. 67
7C	Mar. 67	Apr. 67	Apr. 67	—	—	—	—	Sep. 67

<sup>1</sup>Not a critical factor; project still awaited FHA financing.

The disposition agreement between the BRA and SECD required that BRA approve the drawings and specifications prior to SECD filing for a building permit. It took about 30 days to obtain the approval of the BRA. It took 30 days to have the drawings examined by the zoning administrator, four to six weeks to obtain a hearing before the Zoning Board of Appeals if rejected for zoning, three weeks to obtain a decision from the Board, two to three weeks to have the drawings examined by the other Building Plan Examiners, a week for the Commissioner to issue his letter rejecting the permit, four to five weeks to receive a hearing before the Board of Appeals, and several weeks to obtain the decision from the Board. If the drawings violated zoning requirements, this had to be resolved before the drawings would be processed by the other Plan Examiners. The extended delay in Project 6 was due to a design change. The delay in obtaining the permit on Project 7 was not critical and was caused by difficulties in scheduling conferences in the summer months. No projects were held up awaiting the issuance of a building permit. This was always accomplished within the time required to process the FHA mortgage loan commitment. However, if loan commitments had been obtained in shorter times, approvals by the Building Department might have delayed project construction. Recently, the Department has adopted new procedures which speed up the review of drawings for rehabilitation projects.

The disposition agreement between the BRA and SECD required that the rehabilitations of the buildings comply with the following codes and statutes: The Boston Building Code, Boston Zoning Code, Boston "Fire Prevention Code," State Sanitary Code, State Public Safety Regulations, and the Urban Renewal Plan Standards. The 3'-6" wide egress corridor previously discussed is required for new buildings by State Safety Regulations. The State Sanitary Code sets minimum standards for habitation and these presented no problem. The Urban Renewal Plan Standards are modest and the building rehabilitations done by SECD were consistent with these standards.

Review and approval of SECD's plans and specifications by the BRA produced few recommendations or suggestions. While BRA staff members were helpful and supported SECD in its discussions with the City Departments, it was found that approval of the drawings by the BRA had little or no standing with the Building

## BUILDING STANDARDS AND DESIGNS

Department. There was little effective coordination between the Building Department and the BRA staff in resolving conflicts and inconsistencies of the code as they affected the rehabilitation of South End houses. In fact, there were situations where the BRA staff recommended one standard when the Building Department was enforcing another. The BRA staff wanted to encourage rehabilitation and knew that economic feasibility of rehabilitation was essential for the success of the renewal plan. It is all the more unfortunate that the Urban Renewal Plan was prepared without resolving questions of interpretation of the Boston Building Code in relation to South End row house rehabilitation. Most home owners do not have grants to pursue these questions as SECD did.

## HUD/FHA STANDARDS

When the project commenced in 1964, there was a question as to the rehabilitation standards which HUD/FHA would require. Initial conferences with FHA suggested that the *FHA Minimum Property Standards for Urban Renewal Rehabilitation* (FHA No. 950) would be acceptable. This was confirmed when three months later the FHA Commissioner authorized that the first five projects would be insured by FHA under the experimental housing section of the National Housing Act, Section 233. The FHA No. 950 minimum standards have been carefully drawn with built-in flexibilities which permit judgment by the local FHA insuring office. A number of the standards are expressed in minimum terms with the provision for exceptions where local conditions justify. The designs prepared by SECD's architect on the four initial projects complied with the FHA No. 950 standards with the exception of three items: one, provision of general storage; two, laundry facilities; and three, on-site parking. As the projects were being processed pursuant to the experimental section of the National Housing Act, these requirements were waived. FHA accepted the wood winder stairway in view of the fact that the stairway enclosure would be of one-hour fire-resistive construction and that sprinklers would be installed in the stairway.

FHA accepted the small side rooms as "other habitable rooms" and accepted a seven-foot ceiling height in the base-

ment apartments where that was all that was possible. Although serious architectural difficulties were not encountered, architectural approvals of the projects took a considerable time. There were delays in subsequent projects as plan examiners cited deficiencies which had already been cleared on previous projects. FHA continued to request its standard list of architectural exhibits and requirements even though many of these were not appropriate to the kind of projects the corporation was doing. In Appendix B is a list of exhibits which FHA requests with applications for mortgage loan insurance and a list of architectural requirements which FHA attaches to the commitment when issued. A number of these requirements are inappropriate for a small rehabilitation project. The chief architect of the Boston Office of FHA cooperated with SECD and was helpful in resolving these problems. Nevertheless, delays did occur as these instructions were being clarified.

SECD and the three architectural firms who worked on the project found the FHA No. 950 standards reasonable. There was criticism from other developers that the FHA No. 950 standards were "middle class" and a cause for high rehabilitation costs. SECD believes that these standards are modest and if used with discretion, are appropriate minimum standards for contemporary housing. A reasonable amount of kitchen cabinets and counter space, a closet in every bedroom, a linen closet and a hall closet, and one hundred cubic feet of storage space is not excessive. HUD/FHA's requirements for privacy and orderly arrangement of rooms (kitchen off the living or dining room, bathroom off a hall, no bedroom through a bedroom) are sometimes difficult to achieve in old buildings, but they are desired by most families.

Project 6 in the study was originally designed with some of the apartments having no direct access to the rear yard. To get to the rear yard where the trash and garbage containers were located, one had to go out the front of the house and then through the adjoining building. After considerable discussion and review of this feature, advisors and the Board concluded that it was not logical to do a complete rehabilitation at a cost almost equaling new construction and still have the finished product lack such a basic amenity. A slight saving in cost would not justify the inconvenience to the families for the life of the property, even though people do adapt to their housing situation.

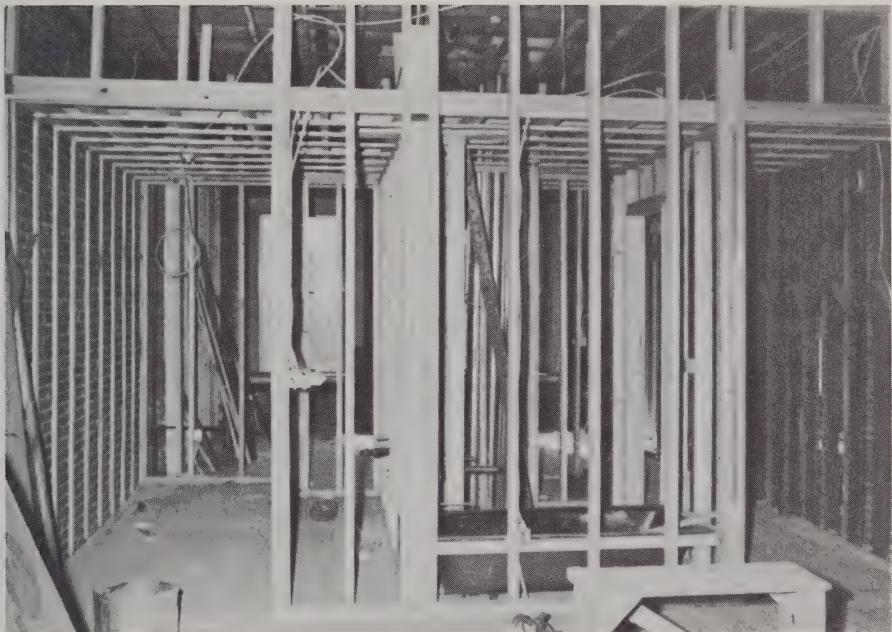
FHA staff made suggestions as to how the apartments might be improved and these were welcomed and generally incorporated in the designs. SECD's architects did not have great difficulties in laying out the apartments to meet HUD/FHA standards.

## ARCHITECTURAL DESIGNS

It was SECD's task to develop the best housing which met building law and FHA's requirements. The corporation was fully aware that minimum rehabilitation costs were vital to the program, and that projects once completed should be as maintenance free as possible for many years. The conditions of the properties which were acquired made it obvious that all mechanical services and equipment would have to be new. Circulating hot water with convectors or baseboard was selected as the most economical heating system. The control for the heating is an outside weather control. Individual apartment controls were suggested by some but rejected in an effort to insure minimum operating costs. Heating fuel for the first four houses is No. 2 oil. In all but one of the subsequent houses, heating fuel is gas. A favorable master-meter rate for gas is available for houses with four or more units. Where oil heat is used, SECD installed electric stoves. Where gas heat was used, the stoves are gas stoves. Kitchen cabinets are formica in all but two projects. These two have birch cabinets. Kitchen sinks are stainless steel and the bathtubs are cast iron. Ceramic tile was installed in the tub portion of the bathroom. Floor covering in the bathrooms is sheet vinyl and in the kitchens, vinyl asbestos tile. On the first four projects, the balance of the flooring was asphalt tile. On subsequent projects, vinyl asbestos tile was used in all areas except bathrooms. This change was made to facilitate cleaning of the floors by the tenants.

Plaster walls were painted with a light shade of paint to provide the apartments with as much light as possible. Vinyl wall coverings and wall papers were rejected on the basis that their initial cost would not be justified by subsequent maintenance savings.

The typical floor of a South End row house has four rooms as previously described in Chapter 1. This layout can be converted into a one bedroom apartment with relatively few changes in



doors and partitioning. The twenty-foot width of a South End row house is sufficient to permit the construction of two bedrooms at either the front or the rear of the house. This two-bedroom apartment requires the revision of the interior partitioning of the typical floor. It was the policy of SECD to create family housing wherever possible and certainly apartments larger than one-bedroom.

Projects 1 through 4 were each single buildings and, in order to qualify for the HUD/FHA financing, each had to have five apartments. (A Section 221 (d)(3) project must have five or more apartments.) Not only did this qualify the projects for the HUD/FHA financing, but it also achieved lowest possible rents per apartment. An apartment was created on each of the five floors of each house. The most efficient layout in most cases was achieved when the kitchen and bath were located back-to-back in the center of the floor. This provided an economical arrangement of mechanical services, facilitated the construction of two-bedroom apartments, and made maximum use of the outside window light. Projects 5, 6, and 7 included more than one house and the necessity to have five apartments in each house was avoided. On these projects, efforts were made to create large apartments wherever possible and feasible in order to meet the needs of large families being relocated in the South End. A scheme was employed

## BUILDING STANDARDS AND DESIGNS

whereby a duplex unit was created using a full floor plus a portion of another floor. The balance of that floor was used as an efficiency apartment or in the case of a basement, for a heater room. In Project 7 the top two and bottom two levels of House 7A are duplexed. The house has only three apartments. House 7C is a large 25 foot wide by 44 foot deep house. Three-bedroom apartments are accommodated on the individual one thousand square foot floors of this house. While large apartments are difficult to produce, 50% of the apartments of Project 7 are three and four-bedroom apartments, a much higher proportion than the usual Section 221 (d)(3) project. Some of the characteristics of all the apartments are indicated in Table VIII.

The work program for the study presumed that through a step-by-step process, designs would be perfected. This did occur. Initial designs were predicted on salvaging a considerable amount of the existing finishes and some interior doors and trim. This was found to be impractical and on the later projects almost all existing plaster was removed. All the mantels were removed and some of the flues. On the later projects some of the brick party walls were left exposed in the finished apartments.

There was considerable discussion of alternative solutions for rehabilitating existing plaster ceilings. SECD chose to remove old ceilings and install new perforated rock lath and plaster

TABLE VIII

**APARTMENT SIZES  
IN NET SQUARE FEET AND FHA ROOM COUNT<sup>1</sup>**

Item	One	Two	Three	Four	All
	Efficiency	Bedroom	Bedroom	Bedroom	Bedroom
<b>Net sq. feet</b>					
per apartment	375	540	630	1010	1080
<b>FHA rooms</b>					
per apartment	2.1	3.3	4.5	6.0	6.6
<b>Average for type of apartment</b>					
	4.3				

<sup>1</sup>Average for type of apartment

ceilings. This was selected over the alternatives of covering the existing ceilings with new plaster or sheet rock, or suspending a second ceiling below the first. Removal of the old ceilings allowed inspection of the joists, reduced the weight of the building, facilitated piping and wiring and allowed for a new plaster ceiling which met code requirements for a one-hour fire-resistive ceiling.

While the original designs were considered successful, many things were learned during the course of the project about what not to do. The first architect selected light fixtures which had lenses supported by invisible clips. The operation of these fixtures is not understood by the tenants and requires the use of a step ladder to change the lamps. On subsequent projects, lenses with an open bottom or a simple drum lens were used. Key-in-knob door locks were installed on apartment entrance doors and these were augmented on later projects with surface applied pick-proof dead locks. These locks were found to provide a sense of security to the occupant.

The Corporation employed Harris Associates to prepare architectural drawings and specifications for the first four projects. Harris Associates had done FHA housing and were experienced with residential rehabilitation. Projects 5 and 7 were designed by the architectural firm of Pard Team and Project 5 was designed by Robert Peabody Brown. Both of the latter firms had had experience with small-building rehabilitation. Complete architectural floor plans were required by FHA and were necessary to estimate the construction costs and to construct the work. FHA requested layouts of the kitchen cabinets. The site plan was a mortgage survey plan and only gave dimensions of the building lot and its location on the street. A heating layout, an electrical layout and riser diagram and a plumbing riser diagram were prepared. Notes on special repairs or reconstruction of the building were indicated on the drawings.

Harris Associates prepared the specifications for the first four projects. Pard Team was employed to prepare a standard specification which SECD could use on all its row house rehabilitations. It was found that this standard specification could be used on subsequent projects with a minimum of revision. This cut down architectural services required and was helpful in standardizing materials and construction techniques on the projects.

## BUILDING STANDARDS AND DESIGNS

The cost of architectural services for the projects is indicated in Table IX. The design of the initial projects was the most expensive because it included special research by Harris Associates in connection with the selection of mechanical systems and finishes.

TABLE IX  
ARCHITECTURAL COSTS

PROJECTS	Per project	Per House	Percent of Construction Cost <sup>1</sup>
1	\$4580 <sup>2</sup>	\$4580	9.6%
2	4435 <sup>2</sup>	4435	9.0%
3	4565 <sup>2</sup>	4565	9.5%
4	4591 <sup>2</sup>	4591	8.8%
5	4130 <sup>3,4</sup>	2065	4.5%
6	4130 <sup>3,4</sup>	2065	4.4%
7	7580 <sup>3,4</sup>	2527	4.6%

<sup>1</sup>Construction costs including allowance for builder's general overhead and fee (see Table XXI).

<sup>2</sup>Includes consultant contract for design studies paid by Grant.

<sup>3</sup>Includes consultant contract for preparation of standard specifications.

<sup>4</sup>No job supervisor.

South End row houses have too many variations to permit the application of a standard rehabilitation design for all houses. The architects found that the position of the winder stair, the arrangement of the entrance floor, and other features are significant and require a distinct design for each house. Each of the firms had some differences of opinion about the most favorable apartment layout and there was some variation in the designs. Each architect took advantage of the experience gained on previous projects, although this was largely due to a continuity which SECD provided as the owner-builder of all the projects. SECD handled substantially all of the negotiations with the City of Boston Building Department and with the FHA and made all of

the decisions with respect to job changes. On Projects 5, 6 and 7, FHA did not require architectural supervision.

The completed apartments were generally well received. They are attractive and many have distinctive features such as high ceilings, large windows, bow front rooms or interior brick walls. While some of the bedrooms are small, closet space is ample. All the houses have rear yards. The houses themselves retain their fine residential quality and add to their immediate neighborhood.





# 3 CONSTRUCTION OF PROJECTS

The means by which low-income housing was to be produced in the study included the employment of full-time staff, use of work crews to the extent feasible, and reduced costs for fees, services, and materials resulting from the capacity to undertake a number of projects. A significant factor to be tested was whether experience on previous projects would result in improved organization of work and reduce lead times and delays. The project, however, was not intended to test the economics of scale as it was limited to 50 to 65 housing units. In this chapter we shall review arrangements for getting contractors, estimating construction costs, organizing the contracting work, mass purchasing, the impact of HUD/FHA's wage requirements, use of work crews and a comparison of small scale rehabilitation, such as that done under the study, with other housing construction.

## GENERAL CONTRACT BIDS

It was presumed that SECD would employ general contractors on at least the initial projects. HUD/FHA's simplified procedures for rehabilitation projects of less than \$200,000 allowed the developer to establish construction costs on the basis of three competitive bids. SECD undertook to follow this procedure on the initial projects.

After the architectural floor layouts had been reviewed by FHA, the architect was requested to complete the working drawings and specifications so that construction bids could be requested. It was necessary to have the debris and existing interior finishes, which were not required for the rehabilitation, removed from the buildings so that the architect could investigate and measure the buildings, and the contractors properly inspect the buildings to determine the extent of the work. The drawings were then completed and bids requested from a list of contractors recommended to SECD by the Boston Redevelopment Authority (BRA) and others.

Finding skillful rehabilitation contractors is difficult, particularly for jobs involving extra administrative work such

## CONSTRUCTION OF PROJECTS

as required by FHA on multi-family housing projects. There were only a few contractors experienced with South End row house rehabilitation. Those experienced were in two classes. One, small contractors who were inadequately financed, who did not carry required insurances and who would have had difficulty obtaining a performance bond as required by FHA and two, somewhat larger contractors who were afraid of the red tape involved in FHA work. Most successful rehabilitation contractors do a substantial portion of their work for regular clients. These contractors are familiar with the requirements of these clients and sell service as much as price. They start jobs with a minimum of delay and are assured of prompt payment. These contractors are not accustomed to jobs with unknown starting dates and special conditions and regulations. These small firms tend to be skeptical of non-profit corporations. The requirement in FHA General Conditions, that "the contractor shall immediately notify the FHA inspector of the delivery of all permits, licenses, certificates of inspection, of approval, of occupancy, etc., and any other such instruments required under codes or by authorities having jurisdiction, regardless of to whom issued and shall cause them to be displayed to the inspector for verification and recordation" sounds like a lot of bother to a contractor bidding on a \$50,000 rehabilitation job. Large contractors who are not perturbed by these conditions, who have the necessary insurance and skills, find small rehabilitation projects unprofitable.

After much coaxing, six bids were received on the first house and four bids on each of the other three houses. In an effort to expedite HUD/FHA processing, bids were requested prior to the final clearance of the drawings by the City of Boston Building Department. Certain allowances for fire windows, fire escapes, and sprinklers were established and added to the contractors' bids. In addition, the architect had recommended that SECD buy certain items, such as appliances, directly, in order to purchase them at a lower unit price. Separate bids were taken on these items and these costs added to the contractors' estimates. The total costs for the four jobs were then submitted to FHA.

At first, HUD/FHA disapproved of these estimates because they were not at all inclusive lump-sum estimates. After several conferences it was agreed that the costs would be used by HUD/FHA for feasibility processing. HUD/FHA then completed the feasibility

processing and requested new applications for commitments from SECD. It is noted that these estimates of costs were much higher than the original allowances carried in the preliminary applications for mortgage loan insurance submitted to FHA five months before.

SECD by this time had decided that of the four initial buildings two would be constructed by general contractors and two would be done by SECD as its own general contractor. Final applications for mortgage insurance commitments were submitted. The four applications were supported by quantity-survey cost-estimates prepared by SECD. It was easier for SECD to prepare these quantity-survey cost-estimates than to go through another round of bidding with the contractors. The Corporation had not yet received the decision of the Board of Appeals with respect to building law items on which it was seeking relief.

At this juncture in the processing, the National Housing Act was amended by Congress. For the first time, construction employees on housing projects sponsored by non-profit corporations and financed under the provisions of Section 221 (d) (3) had to be paid "prevailing wages".

Prevailing wages are the hourly wage rates of pay, including fringe benefits, which the U. S. Secretary of Labor determines to be prevailing in the locality in which the work is to be performed for the corresponding classes of laborers and mechanics employed on construction of a similar character to the housing project.

HUD/FHA established construction costs for the four projects. With the introduction of the prevailing wage requirement, all the bids and estimates which SECD had prepared were void. Some of the contractors withdrew their bids, preferring not to work under the prevailing wage requirement. One contractor was prepared to do the work at prevailing wages but his revised quotation was too high and well beyond HUD/FHA's cost allowances. In order to move the projects ahead, SECD decided to accept HUD/FHA's estimate of construction costs and to act as its own contractor on the first four projects. Revised applications for mortgage loan insurance were then submitted on this basis.

## CONSTRUCTION OF PROJECTS

### Contracting

There are a number of advantages in being one's own general contractor. It provides better control of the job and allows an accurate determination of cost. It provides a direct relationship with sub-contractors and guarantees better follow up during the job and during the guarantee period. It assures fuller compliance with specifications and is helpful in standardizing materials. It greatly expedites decisions with respect to job changes, reduces claims for extras, and gives the owner-mortgagor intimate knowledge of the job which is helpful in dealing with HUD/FHA. It is not surprising that most successful rental property owners do their own rehabilitation work, either as their own general contractor or through a subsidiary company.

The disadvantages of being one's own general contractor in housing development are that the owner accepts liability for cost overruns, that job overhead may be more costly, and that the owner has the problem of providing continuous employment for his construction crew.

SECD recommended that contingencies be provided in the construction estimates for unforeseen items which were bound to arise. HUD/FHA would not approve a contingency allowance. HUD/FHA did allow a 3% general overhead and a 7% builder's profit on contracts of less than \$100,000 and a 3% general overhead and a 6% builder's profit on contracts of \$100,000 to \$300,000. There were cost overruns on the first six projects and the allowances for general overhead and builder's fee were applied against these cost overruns. Staff salaries and other administrative expenses in connection with the construction of the projects were paid from the grant and SECD funds. It is estimated that \$72,000 of such funds were used to pay for administrative costs in connection with construction of the seven projects of the study. This is equal to 14% of the \$500,000 of construction completed by SECD under the project. If rehabilitation costs are accurately estimated and a large volume of construction work undertaken, fee schedules allowed by FHA in the mortgages appear to be sufficient to sustain the contracting operations of a non-profit corporation acting as its own general contractor.

SECD organized its construction operations in a manner typical of small rehabilitation contractors. It employed a competent job superintendent who was on the job at all times. It developed working relationships with a number of sub-contractors, who became familiar with its operations. SECD attempted to get bids from South End contractors, but there were few contractors available and most chose not to bid because of the prevailing wage requirement. 17% of SECD's sub-contractor firms were owned by Afro-Americans. Standard sources of supply were arranged for lumber, doors and windows, hardware and appliances. An advantage of standardized materials is that tradesmen on the job are familiar with the material and this reduces installation costs.

Without a question, SECD's construction operations became more efficient with each project. The last three houses, performed as one job, were completed with almost the same supervision and overhead expense and in less time than the first house. By spreading overhead costs over more work, costs per house are reduced. The jobs made better progress as the superintendent and mechanics became skillful at anticipating special job conditions. Rehabilitation construction costs for the seven projects in the study showed a decline when standardized to the wage and material cost level of the last project. (See Table XVI.)

### Mass Purchasing

A test of mass purchasing was not possible within the scope of the study. Certain items such as appliances were purchased for groups of houses under one contract at favorable prices. The specifications for boilers, pumps, fans, plumbing fixtures were standardized, but this was more to facilitate maintenance than to reduce purchasing price. Exterior windows in each house vary in size from building to building and from floor to floor and had to be measured. Interior wood doors were standardized in size but varied in number from house to house. Lumber could not be purchased in truck or carload lots because handling costs would have greatly exceeded any savings in initial price. In small renovation work, getting the right materials in the right quantity at the right time is important. Overstocking a job will in-

## CONSTRUCTION OF PROJECTS

convenience the work and result in excessive handling cost and waste of material. The winder stairway made material handling on the job troublesome. The boilers and other material installed in the basement were brought in through the rear exterior door of the house.

SECD, throughout the project, investigated alternative construction techniques. On several occasions, bids were requested from dry-wall contractors to see if dry-wall were cheaper than plaster. Alternate designs included metal channel and stud systems to facilitate the use of the large 4' by 8' sheets. But in each case, the dry-wall contractors could not improve on the price of plaster on rock lath. The small scale of each project, the short length of the partitions and difficulties in handling materials in a 5-level row house were the major obstacles.

### Prevailing Wage Requirement

The Corporation found that the requirement to pay prevailing wages not only increased construction costs but introduced many administrative problems. A list of wages paid on the seven projects appears in Table X. These wages were the same as those paid on union construction jobs in Boston at the time. SECD's sub-contractors and other contractors working in the South End indicated that prevailing wages issued by the Department of Labor were approximately 35% higher than those paid on most rehabilitation jobs in Boston. A number of the contractors were paying carpenters \$2.75 to \$4.00 an hour while the prevailing wage rate, issued by the Secretary of Labor, was \$4.75. Laborers were being paid \$2.00 to \$2.50 rather than the prevailing wage rate of \$3.75. On the basis that direct labor is 40% of construction costs, the requirement to pay prevailing wages increased overall construction costs by 14%. This finding is consistent with a study done by the BRA on rehabilitation work in the Washington Park area of Boston. Many rehabilitation contractors provide conditions of employment which, though at lower hourly wages, are preferred by the mechanics. These contractors hold their experienced men by assuring them continuous employment. This is easier on non-union rehabilitation work because the work is inside and an individual mechanic can do a variety of jobs. When there is a shortage of contract work, contractors will often

TABLE X

**PREVAILING WAGES PAID ON PROJECTS IN HOURLY WAGE RATES  
INCLUDING FRINGE BENEFITS**

Projects: Prevailing Wages as of:	1&2 10/27/65	3&4 1/13/66	5 10/28/66	6 1/26/67	7 11/22/67	Index Weight- ing Factor <sup>1</sup>
Bricklayer	\$5.40	\$5.40	\$5.72	\$5.72	\$6.12	2
Carpenter	4.75	4.80	5.055	5.155	5.56	8
Electrician	5.5825	5.5825	5.8545	5.8545	6.429	2
Ironworker	5.08	5.37	5.69	5.69	6.00	1
Laborer	3.75	3.75	3.95	3.95	4.15	9
Lather	4.05	4.05	4.05	4.05	4.05	2
Painter, brush	4.445	4.445	4.705	4.705	5.055	2
Plasterer	5.30	5.30	5.55	5.55	5.80	2
Plasterer-tender	3.95	3.95	4.15	4.15	4.35	1
Roofer-waterproofer	4.95	5.05	5.15	5.25	5.25	1
Sprinkler fitter	4.975	4.975	5.57	5.77	5.77	1
Plumber	5.42	5.67	5.67	5.97	6.27	4
<b>Index for SECD</b>						
Projects*	\$4.63	\$4.68	\$4.89	\$4.95	\$5.23	
Percent increase in index on annual basis		4.3%	6.0%	4.9%	6.8%	
Percent increase to equal level of Project 7	13%	12%	7%	6%		

<sup>1</sup> Index based upon estimated proportion of total labor for SECD Rehabilitation Projects.

have maintenance work to which the men can be assigned. Some non-union contractors maintain health and accident insurance policies for their men and some pay for vacation and sick leaves. Higher wage rates paid on union jobs anticipate layoffs caused by inclement weather and job terminations. Mechanics working for open shop rehabilitation

## CONSTRUCTION OF PROJECTS

contractors will often make the same annual wage as mechanics working on regular union work.

The prevailing wage requirement presents a number of administrative difficulties for small non-union firms. Most of SECD's sub-contractors required assistance in the preparation of the special payrolls which had to be turned into the Government. Sub-contractors had difficulty getting HUD/FHA to approve the fringe benefits which they had customarily paid their men. Special documentation and submissions to the Department of Labor were required. Contractors also encountered administrative problems when their men worked partially on SECD's work and partially on other work. Not only were the rates of pay different, but the computation of special fringe benefits and taxes was complicated. Some contractors felt that prevailing wage rates were an incentive for increased production. Others reported that their men tended to draw the job out in order to increase the amount of work at the higher prevailing wage rate. Some contractors found it difficult to actually gauge the impact of the prevailing wage requirement on their costs, at least not until they had worked several jobs at these rates.

The prevailing wage requirement eliminated many small contractors and tended to eliminate the less skilled mechanic. Unskilled mechanics can sometimes find employment at lower wage rates on non-union rehabilitation and maintenance work. This provides an opportunity to learn about construction. On jobs where union or prevailing wage rates must be paid, contractors tend to employ only experienced mechanics.

### Work Crews

It was the intention of the Corporation to use work crews where feasible in the project. It was presumed that these crews would include semi-skilled people, particularly from the neighborhood. The requirement to pay prevailing wages made this impractical. The Corporation had to employ skilled mechanics if its costs were to be valid. The Corporation's construction superintendent was located through an advertisement in the newspaper. The construction superintendent, as well as the two carpenters who were with the Corporation through most of the project, were all licensed builders who had an

## CONSTRUCTION OF PROJECTS

average of twenty-five years experience. There were no mechanics known to the Corporation in the South End with similar skills who were not working for a business in which they had an interest.

The Corporation did set up a training program with the Neighborhood Youth Corps (NYC). The original plan was to have six to ten youths work on the projects, first as a crew and then assigned on an individual basis to a construction mechanic. The Corporation's superintendent, who had had considerable experience in supervising untrained youths in the construction of buildings, directed the program and each youth had individual counseling by his NYC counselor. The program lasted for a period of ten months and although it was not successful, much was learned.

The youths ranged from sixteen to twenty years of age and had little or no previous work experience. They came to the program with high ambitions but insufficient work experience and motivation. The work was harder than they had anticipated and unfortunately it started during the winter months and many of the youths were neither equipped nor desirous of working in unheated buildings. SECD's superintendent spent considerable amounts of time demonstrating assignments and working directly with the youths. It was planned to "graduate" the youths to work with individual mechanics after simple work rules had been learned. However, when the youths were assigned to mechanics, it was found that the mechanics were not necessarily good teachers, and were not able to devote sufficient time to the training of the youth assigned to them. The youths often exhibited indifference to instructions and a lack of care of work completed and in place and this caused problems and discouraged SECD's superintendent and mechanics with whom the youths were working. After several months, NYC appointed a full time crew chief and this was helpful. However, the crew chief was not experienced in construction and had difficulty coordinating his direction of the crew with the construction operations. The youths were also attending school and getting medical care. These appointments were scheduled at different times throughout the day and made supervision of the crew difficult. It disrupted assignments to special tasks. The youths also worked only a partial work week and this did not help. During one period they worked twenty-five hours a week and as SECD's superintendent remarked, "How do you divide

## CONSTRUCTION OF PROJECTS

twenty-five by eight?" The youths were paid \$1.25 per hour by NYC. The funding of NYC throughout the period was indefinite and there were numerous changes in NYC administrative personnel. A lack of motivation on the part of the youths, insufficient pre-training, the absence of full-time, qualified instructors, and administrative confusions made success for the program impossible. The program was eventually terminated with the re-assignment of the youths to other types of work. Several of the youths who were in the program for a period of four to five months and indicated that where there was motivation, there could be real individual achievement. For a number of the youths, it was valuable work experience. While a considerable amount of work was done by the youths, the program did not make a significant contribution to lowering construction costs, even though the youths were paid by NYC. As indicated in the next chapter, the costs of administrating the program very nearly offset the value of the work completed.

SECD's experience with job training would indicate that construction work is not by any means the best training situation. The construction industry is organized around craft skills and each mechanic on a union or prevailing wage job is expected to meet certain threshold requirements of skill, licenses, and other work rules. When contractors submit bids, they commit themselves to levels of production which must be achieved if they are to make a profit on a job. In competitive situations, this bars them from taking on too many unskilled or new mechanics. Construction is also a dangerous business and a novice is often a risk both to himself and to his employer. Construction workers encounter a great variety of work and it takes years before a mechanic is fully conversant with all the phases of a single trade. The apprentice program is, at best, only moderately successful. It is often set up with too high entrance requirements and is burdened with administrative requirements which discourage contractors from taking on apprentices. There are a number of inherent problems with training unskilled people within strict job classifications. A good training situation should recognize and develop individual aptitudes and abilities. Work training programs which are merely grafted onto Federal housing programs and other construction, will not be effective unless job training is carefully structured into the business and new trainees protected from economic pressures which might curtail adequate training and deny the development of individual skills.

The Corporation's experience would indicate that job training on rehabilitation projects, such as undertaken under this study, is not necessarily easier or more productive than on new construction work. The presumption is often made that rehabilitation construction work is easier and can be learned in a shorter period of time than skills required for new construction. A good mechanic on a rehabilitation job will work with a minimum of supervision and will handle without delay, numerous job situations. Work must be adjusted to un-level floors and fitted into spaces that do not conform to the layouts shown on the drawings. Only a skilled mechanic can handle these problems with ease. Rebuilding a winder stairway or an eight foot entrance door is not for the untrained mechanic. Restoration rehabilitation such as that done under this project offered a limited amount of simple routine work. In new construction, uniform dimensions and materials can be established and industrial production techniques introduced. The installation of a four foot by twelve foot dry-wall sheet, screw fastened with an electric drive hammer into a metal stud system between concrete slabs of uniform ceiling heights offers a better training situation than installing rock lath and plaster on existing wood strapping on curved walls in stories of varying ceiling heights and unlevel floors. Training programs for construction workers would do better to look to new technologies with which we may build in the future rather than on the craftsmanship which will let us restore houses built decades ago.



# 4 REHABILITATION CONSTRUCTION COSTS

In this Chapter we shall review the construction costs of the seven projects and the various factors which influenced these costs.

## CONSTRUCTION COSTS BY TRADES

Table XI lists the rehabilitation construction costs for the projects. The costs are subdivided into the usual construction trades. The following trades were sublet by SECD - storm windows, ironwork, lath and plaster, roofing and sheet metal, painting, floor covering and tile, kitchen cabinets, plumbing and heating, electrical and window shades. In addition, masonry and concrete was sublet on Projects 1, 2, 3, 4 and 7. A substantial portion of the demolition on Projects 1 through 4 was performed under a special sub-contract. Otherwise, the work was performed by SECD's construction crew. Construction costs have been adjusted for the net contribution to the projects of the Neighborhood Youth Corps and the Just-A-Start program, the latter supervised by the Boston Redevelopment Authority (BRA). The net contribution to the projects by the Neighborhood Youth Corps (estimated savings in labor less the cost of SECD supervision) is estimated to be \$370 on Project 1, \$380 on Project 2, \$250 on Project 3, \$270 on Project 4 and \$200 on Project 6. The Just-A-Start program was organized by the BRA for the purpose of having racially mixed groups of young people work on community projects in the area. Some of the youths were paid, others worked for scholarships and some for no compensation at all. On Projects 6 and 7, the Just-A-Start program crews stripped out plaster and removed debris from the buildings prior to the start of construction. The contribution of this program to these two projects is estimated to be \$600 and \$2,200 respectively. These adjustments have been made to the actual costs to produce the figures that appear in Table XI. Added to the cost of the work at the site is the usual fee allowed by FHA for builder's overhead and profit. On projects of less than \$100,000, 3% is allowed for general overhead and 7% for profit. On projects from \$100,000 to \$300,000, 3% is allowed for general overhead and 6% for profit. Project 7 was the only project on which the full builder's general overhead and fee were recovered from the mortgage loan.

## REHABILITATION CONSTRUCTION COSTS

TABLE XI

## REHABILITATION CONSTRUCTION COSTS PER PROJECT

Trade	Project No.						
	1	2	3	4	5	6	7
Demolition	\$ 825	\$ 825	\$ 1,026	\$ 1,389	\$ 2,250	\$ 2,770	\$ 5,814
Excavation and Fill	610	292	333	580	1,412	1,207	1,786
Masonry and Concrete	3,356	3,115	3,228	3,500	7,008	7,499	13,853
Carpentry and Millwork	7,677	7,533	5,638	7,158	12,400	14,315	24,142
Windows	1,415	1,125	1,071	1,539	2,041	1,267	4,096
Storm Windows	303	451	405	351	887	876	1,563
Doors and Frames	1,737	2,287	1,695	1,808	4,648	2,989	4,834
Ironwork	1,698	1,750	1,775	1,740	1,923	2,648	3,075
Lath and Plaster	3,266	4,200	5,588	4,920	8,253	8,907	15,000
Roofing and Sheet Metal	1,194	1,126	1,207	925	1,900	2,075	5,346
Painting	2,155	2,130	2,040	2,180	4,218	4,404	7,612
Hardware and Accessories	462	458	470	465	1,061	1,102	1,314
Floor Covering and Tile	1,241	1,687	1,475	1,683	3,274	3,322	6,311
Appliances	1,102	1,098	1,082	1,064	1,720	1,748	2,546
Kitchen Cabinets	1,050	955	931	925	2,240	2,020	3,850
Plumbing and Heating	8,560	8,735	9,008	9,782	16,540	17,018	24,650
Electrical	2,249	2,281	2,340	2,844	4,850	4,391	9,954
Shades	130	120	120	106	230	272	485
Mail Boxes	42	42	56	42	70	70	133
Site Work	766	992	894	633	1,094	1,165	3,922
Job Overhead	3,252	3,050	3,034	3,294	4,630	4,938	9,857
Performance Bond	398	382	397	400	599	653	1,230
TOTAL	43,488	44,634	43,813	47,328	83,248	85,656	151,373
Allowance for builder's general overhead and profit at usual FHA schedule <sup>1</sup>	4,309	4,425	4,341	4,693	8,264	8,500	13,359
	\$47,797	\$49,059	\$48,154	\$52,021	\$91,512	\$94,156	\$164,732

<sup>1</sup> FHA allows 10% on all trades except performance bond on projects of less than \$100,000 and 9% on project of \$100,000 to \$300,000.

TABLE XII

## REHABILITATION CONSTRUCTION COSTS PER HOUSE

Trade	1	2	3	4	5A	5B	6A	6B	7A	7B	7C
Demolition	\$ 825	\$ 825	\$ 1,026	\$ 1,389	\$ 1,125	\$ 1,125	\$ 1,385	\$ 1,270	\$ 2,390	\$ 2,154	
Excavation and Fill	610	292	333	580	706	706	604	603	450	460	880
Masonry and Concrete	3,356	3,115	3,228	3,500	3,504	3,504	3,750	3,749	3,600	5,400	4,850
Carpentry and Millwork	7,677	7,533	5,638	7,158	6,200	6,200	7,157	3,158	6,550	6,950	10,640
Windows	1,415	1,125	1,071	1,539	1,020	1,021	633	634	1,060	1,640	1,400
Storm Windows	303	451	405	351	444	443	438	438	420	570	570
Doors and Frames	1,737	2,287	1,695	1,808	2,324	2,324	1,495	1,494	1,380	1,590	1,860
Ironwork	1,698	1,750	1,775	1,740	961	962	1,324	1,324	700	1,480	900
Lath and Plaster	3,266	4,200	5,588	4,920	4,127	4,126	4,454	4,453	4,500	4,600	5,900
Roofing and Sheet Metal	1,194	1,126	1,207	925	950	950	1,037	1,038	1,790	1,790	1,770
Painting	2,155	2,130	2,040	2,180	2,109	2,109	2,202	2,202	2,200	2,360	3,050
Hardware and Accessories	462	458	470	465	530	531	551	551	370	440	500
Floor Covering and Tile	1,241	1,687	1,475	1,683	1,637	1,637	1,661	1,661	1,820	2,000	2,490
Appliances	1,102	1,098	1,082	1,064	860	860	874	874	650	850	1,050
Kitchen Cabinets	1,050	955	931	925	1,120	1,120	1,010	1,010	950	1,310	1,590
Plumbing and Heating	8,560	8,735	9,008	9,782	8,270	8,270	8,509	8,509	8,600	8,100	9,650
Electrical	2,249	2,281	2,340	2,844	2,425	2,425	2,195	2,196	2,860	3,230	3,850
Shades	130	120	120	106	115	115	136	136	120	150	220
Mail Boxes	42	42	56	42	35	35	35	35	30	50	50
Site Work	766	992	894	633	547	547	583	582	1,110	1,510	1,300
Job Overhead	3,252	3,050	3,034	3,294	2,315	2,315	2,469	2,469	2,700	3,290	3,880
Performance Bond	398	382	397	400	299	300	326	327	360	400	470
TOTAL	\$43,488	\$44,634	\$43,813	\$47,328	\$41,624	\$41,624	\$42,828	\$42,828	\$41,790	\$50,560	\$59,020
Allowance for builder's general overhead and profit at usual FHA schedule <sup>1</sup>											
	4,309	4,425	4,341	4,693	4,066	4,066	4,250	4,250	3,744	4,408	5,210
	\$47,797	\$49,059	\$48,154	\$52,021	\$45,756	\$45,756	\$47,078	\$47,078	\$45,534	\$54,968	\$64,230

<sup>1</sup>FHA allows 10% on all trades except performance bond on projects of less than \$100,000 and 9% on projects of \$100,000 to \$300,000.

## REHABILITATION CONSTRUCTION COSTS

Projects 1 through 4 are single houses, Projects 5 and 6, two houses and Project 7, three houses. Table XII indicates rehabilitation construction costs by house, broken down by construction trade and with the allowances for builder's general overhead and profit. Costs for construction of each of the two houses in Project 5 and Project 6 have been assumed to be one-half of the total project construction cost. While this assumption is not completely accurate, it is reasonable. One of the two houses had the heater room and this would have made that house more expensive, but the difference in cost is less than \$1,500. Project 7 had three houses which were built as one project but which were on separate lots and had no equipment in common.

A description of the scope of the work and some of the conditions which affected costs follows.

### Demolition

The cost of demolition was primarily a function of the amount of material which was removed and how much of it had to be hand carried up or down stairs. House 4 was the largest of the first four and the demolition cost reflects this. As the project progressed, a greater percentage of existing plaster finish and trim was removed from each house. This accounts in some measure for the rising cost of demolition. The demolition and removal from the site of a three-story extension to House 7B accounts for the high demolition cost of that building. Demolition on House 7C included the removal of a two-story high ell at the rear of the building. House 7C was also considerably larger than previous houses. On Projects 6 and 7, substantially all existing plaster was removed except plaster on the party wall in the winder stairway and a small portion of the wood lath and plaster on the exterior walls. Interior partitioning was also removed, except for the partition studding around the stairway. All existing piping, fixtures, sinks, etc. were removed. Old furniture and trash found in the building when it was acquired was expensive to remove. This constituted about 25% of the demolition costs.

Plaster debris was removed from the upper stories of the buildings by putting it in paper bags and tossing the bags into the truck below or by dropping them down a cardboard chute to

the truck. Material removed from attics had to be carried down one flight of stairs, and material from the basements carried up one flight.

### Excavation and Fill

Little excavation was required except for trenching for plumbing work. In some of the houses which had wood basement floors, fill was required to raise the grade for the new concrete floor. The existing grade was brought up approximately 2-1/2 feet in House 1. Excavation costs for Project 5 were high because the existing grade had to be lowered one foot to permit a 7'-6" ceiling height in the basement. Excavated material was a thick clay which had to be shoveled out by hand. The work was made more complicated because the city sewer backed up and flooded the house. In House 7C, the sub-soil was found to be inadequate to support a concrete floor. A new wood floor had to be supported on the party walls. Fill for Projects 1 and 2 was bank run gravel and on Projects 3 through 7, crushed stone.



### Masonry and Concrete Work

Masonry work included the pointing of exterior brick work and the repair of exterior brownstone lintels and sills. The latter were often badly spalled and had to be patched. The extent of repair of masonry walls varied with each project. The exterior face brick on the front wall of House 1 had delaminated and a

## REHABILITATION CONSTRUCTION COSTS

substantial portion of the wall had to be reconstructed. There were extensive failures in the brick wall at the rear of House 4 and these had to be reconstructed. There were substantial masonry repairs required on Houses 7B and 7C where extensions at the rear of the building were removed. The top two or three feet of the rear exterior wall of Houses 2, 3, 6A, 6B, 7A and 7B had to be reconstructed. The estimated unit cost for pointing and repair of lintels and sills including costs of scaffolding was .80¢ per square foot. The exterior walls on South End row houses are about 40 feet high. Masonry work also included repair of flues at party walls, patching masonry foundation walls, patching stone steps at the front of the houses, bricking in new wood windows, and fire-stopping interior partitions and at party walls. Where flue chases had been cut into party walls, these had to be repaired. The heater room partitions in the basement were constructed of 8" block partitions. The basement concrete floor, installed in all houses but 7C, was a 4" thick 3,000 p.s.i. concrete slab with 6 x 6 reinforcing wire. Exterior brick work on Houses 1, 5A, 5B, 6A, 6B, 7A, 7B and 7C was done in winter months and this increased costs. The exterior brick work on House 7B was costly because it was an end house with three exposed walls and included bricking-in eleven new windows. Building 7C was a large building which had special work where a two story extension to the building was removed.



## Carpentry and Millwork

Carpentry work included the construction of dormers, repair of floor framing and sub floors, installation of new wood partitioning including grounds, hung ceilings, repair of existing wood strapping and new wood strapping underlayment for floor covering, wood base, wood shelving, inside window finish, new stairs, repair of railings and balusters, and new applied treads. The carpentry work was the most difficult to estimate because it had the greatest number of unknowns. Stud partitions on initial buildings were estimated at .42¢ per square foot. This was too low. Actual costs of studding on, say Project 6, was .60¢ per square foot. Different ceiling heights on each story, un-level floors and short partitions, all contribute to high partition costs. The average length of partitions between corners or between corner and door openings was approximately five feet. Underlayment for finish floor coverings was 3/8" and later 1/2" particle board. 4' x 8' sheets were nailed at the perimeter and along floor joists. Cost of underlayment on Projects 5 and 6 was .34¢ per square foot. The high cost of underlayment was caused by uneven floors, the small size of the rooms, difficulty in handling material, and large amount of fitting required. Contributing to the high cost of carpentry on the first project was the inexperience of the crew, the construction of dormers at both front and rear of the building, and the complete rebuilding of two and one-half flights of stairs which had been burnt out by a fire prior to SECD's acquisition of the building. Carpentry and millwork on Project 2 included an extensive amount of leveling of floors and more difficult partition construction because it was an end building and the end wall was not parallel to the party wall. Carpentry and millwork on Project 3, was the cheapest. The work was done in the summer months and no major difficulties were encountered. Carpentry and millwork on Project 4 included the replacement of one flight of stairs and the reconstruction of joists and rough flooring on a large portion of one floor. The joists and the boarding in this case were found to be rotten. Carpentry and millwork on Project 5 included several new flights of stairs and on Project 6, the reconstruction of a large portion of one floor and several flights of stairs which had been damaged by fire prior to SECD's acquisition of the building. One of the houses of Project 7 required a new wood floor in the basement, extensive work on the exterior eaves, extra partitioning because of high story heights, and hung ceilings over both the kitchens and baths.

## REHABILITATION CONSTRUCTION COSTS

### Windows

The row houses rehabilitated under the project had 22 to 24 windows. Existing sash was generally replaced with new sash and jamb liners except where window frames were rotted, in which case the entire window frame and sash was replaced. The higher costs for windows on Project 1 can be attributed to the inexperience of the crew. High costs on Project 4 can be attributed to the large number of complete new frames required. Project 6 indicates improved skill of the mechanics in installing the windows. Project 7 involved replacement of more window frames, an end building with more windows and a number of very large or special windows on House 7. On several projects, an attempt was made to repair the old sash. Houses 5A and 5B were in the best shape when acquired of any of the houses and reuse of the existing windows was tried. The results were discouraging. Many of the windows had to be reglazed and this is not easy on old sash. In a number of cases, after attempting to repair the windows, it was found they had to be replaced.

### Storm Windows

Triple channel anodized aluminum storm windows and screens were installed on all exterior windows. The variation in storm window costs can be attributed to the variation in a number of windows and the special framing of curved windows required to accommodate straight storm window frames. Project 2 was an end building with four extra windows. Project 7 included an end house with six extra windows and one house with a number of oversized windows.

### Doors and Frames

Exterior front doors were 1-3/4" glazed wood doors installed with mortise locks and overhead door closers. Apartment entrance doors were 1-3/4" solid core wood doors with wood frames, 7" spring hinges and a key-in-knob lock set. Apartment entrance doors and frames were delivered to the job pre-assembled with doors pre-bored for the lock. Interior apartment doors were 1-3/8" hollow core wood

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doors and wood frames, pre-assembled with hardware. Closet doors were either 1-3/8" hollow core doors or masonite bi-fold doors. Unit cost on the last project for 2'-8" x 6'-8" apartment entrance doors, not including cost of hardware, was \$65.00 per door and frame. Unit cost of typical 2'-6" x 6'-8" x 1-3/8" hollow core door and frame complete with hardware installed was \$29.00 per door and frame. Unit cost for 4' x 8' high bi-fold doors, complete with hardware, was approximately \$40.00 per opening. The high cost on Project 2 for doors and frames was caused by angular lay-out of partitions and unevenness of floors. High costs on Project 5 are attributed to special work required to fit casings because the plaster had not been installed flush with the grounds.

### Ironwork

Ironwork included fire escapes, fire balconies and wrought iron fencing at front yards. Projects 1 through 4 included installation of a new fire escape to the ground at the rear of the buildings. Project 7 involved one complete new fire escape and balconies on two other buildings. Front yard fencing averaged \$150.00 per building.

### Lath and Plaster

Original estimates for lath and plaster were low because the cost of patching old plaster was underestimated and because the contractors misjudged the impact of the prevailing wage requirement. The sub-contractor on Project 1 lost money on the job. Another plastering contractor on Project 2 also lost money on the job. This same contractor started Project 3 but walked off the job. The contractor had been advanced money to help finance his work. When he left the job, SECD suffered the loss. Projects 5, 6 and 7 were correctly estimated by SECD and sublet without difficulties. Lath and plaster work, except for wire lath and three-coat plaster ceilings in heater rooms, was 3/8" rock lath and 9/16" two-coat plaster. Unit price for lath and plaster on Projects 4, 5 and 6 was \$3.00 per square yard and on Project 7, \$3.10 per square yard. The typical row house utilized for this project required 1,450 square yards of new lath and plaster. On projects after the study project, the application of dry-wall over old plaster was

found to be effective. This practice substantially reduces demolition work, and speeds up the job.

### **Roofing and Sheet Metal**

All old roofs and sheet metal work were replaced except slate mansard roofs which were frequently repaired. New flashings and gutters were 16oz. copper. Roofing and sheet metal work included the replacement of the existing skylight in the stairway. High cost of Project 7 is partially explained by the increased cost of copper. Curved gutters at the top of bow fronts cost approximately \$10.00 per linear foot.

### **Painting**

Existing exterior wood trim was painted two coats of oil paint. New exterior wood trim received three coats. The interior of the houses was painted two coats. Semi-gloss oil paint was used in the kitchens, baths, public halls and on interior wood trim. The balance on Projects 1 through 6 was painted two coats of flat latex base paint. On Project 7 this was changed to satin finish oil paint.

### **Hardware and Accessories**

This item includes finished hardware (material only) and labor and material for bathroom accessories and medicine cabinets.

### **Floor Covering and Ceramic Tile**

On Projects 1 through 4, floor covering was 1/8" asphalt tile in all areas except kitchens and baths. Kitchen flooring was 1/8" vinyl asbestos tile and bathroom flooring was sheet vinyl. On Projects 5, 6 and 7, floor covering was 3/32" vinyl asbestos tile in all areas except bathrooms where sheet material was used. 4-1/4" x 4-1/4"

## REHABILITATION CONSTRUCTION COSTS

ceramic tile set in mastic was installed to a height six feet above the floor in the tub area only. 4" rubber cove base was used in all rooms.

### Appliances

Refrigerators were 10-cubic foot or 12-cubic foot, depending on the size of apartment. Stoves were 20-inch electric stoves on Projects 1 through 4 and 20-inch gas stoves on Projects 5 and 6. Project 7 had 12-cubic foot refrigerators and 30-inch stoves.

### Kitchen Cabinets

Birch cabinets were installed on two projects and plastic laminated wood cabinets on the others. Counters were plastic laminated with 4" back splashes. Cabinets were not installed over the stoves. Because of differences in wall and floor levels, it was more practical to install custom measured pre-assembled cabinets than to use stock cabinets with fillers. Project 7 has a larger proportion of three and four bedroom apartments and the kitchens are larger.

### Plumbing and Heating

Plumbing and heating costs include new water services from the street; sprinkler systems in kitchens, stairways and basements (except in House 7A); forced hot water heating systems with baseboard radiation or convectors; oil or gas fired boilers; domestic hot water heating; hot and cold water and waste systems; bathroom fixtures and kitchen sinks. On Projects 1 through 4, the hot water system is a storage tank with an internal tankless coil in the boiler. On Projects 5, 6 and 7, hot water is generated by an external tankless heater. Bathtubs are cast iron. Sinks are one compartment stainless steel. Projects 5 and 6 have one boiler serving two houses. Project 4 is the only project in which a new sewer to the street was installed. Costs on Projects 5, 6 and 7 are reduced by an installation allowance from the gas company. The cost of heating and plumbing work on a per apartment basis was slightly higher on Project 4 because of installation of the new sewer line, and on Project 7 because of the greater percentage of large units.

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### Electrical

Projects 1 through 4 have a 200 ampere service with 60 ampere apartment services. Projects 5 and 6 have 2 100 ampere services, one to each building in the project, with 40 ampere apartment services. All houses have emergency lighting in stairways except House 7A. Branch wiring was Romex. Electrical costs on Projects 1 through 4 have been reduced by a wiring allowance provided by the electrical utility. Electrical costs on Project 4 were unusually high because the sub-contractor got into financial difficulties and SECD had to purchase some of the materials and complete some of the work. Electrical work on Project 7 reflects the larger apartments and the substantially higher costs for copper wire and electrical equipment.

### Shades

Window shades and adjustable curtain rods were installed at all windows.

### Mail Boxes

Stainless steel mail boxes with apartment doorbells were installed. This item includes material only. Front door lock is released from each apartment.

### Site Work

Site work included fencing around rear yard, brick walks, trashbarrel shed and landscaping. Site work costs per hour were lower on Project 5 and 6 where there was a double yard. Project 7 had special garden walls and brick steps.

### Job overhead

Job overhead included the cost of permits, barricades, temporary light and power, rubbish removal, building

cleaning, small tools, losses from vandalism, cost of truck and job supervision. Job supervision constituted between 35% and 50% of job overhead. It was necessary on four of the projects to provide temporary heat during construction. Watchmen were employed only on Project 7 for a two month period.

### Unit Construction Costs

Table XIII indicates rehabilitation construction costs per gross square foot by project and Table XIV indicates rehabilitation construction costs per gross square foot by house. Gross square footage in these tables is defined as the area of the various floors of the building measured from the outside of the exterior walls and the center of the party walls and includes all floors of the building on which there are living accommodations. Table XIV indicates a low footage cost for Buildings 7A and 7C. Building 7A did not have sprinklers or emergency lights, had only fire balconies at the rear of the building and had only three apartments. This naturally lowered the rehabilitation costs for the house. House 7C was the largest in area with the largest apartments. Unit construction costs were decreased therefore with the increase in floor area per apartment (fewer baths, fewer kitchens, boilers, etc., per gross square foot).

Table XV indicates the rehabilitation construction costs per apartment and per FHA room. Construction costs per apartment vary considerably with the size of the apartment and the number of apartments which are developed in each row house. The costs of masonry work, roofing, window work, excavation, flooring, heating, etc., will be approximately the same with the house divided into three, four or five apartments. Costs per apartment will be much higher therefore where there are fewer units in the same house. As described earlier, SECD attempted to create large units wherever possible and feasible. This was done on the later projects, particularly Project 7, where there was an average of only four apartments per house and where half of the apartments were either three or four-bed-room apartments. This resulted in a higher unit cost per apartment.

## REHABILITATION CONSTRUCTION COSTS

TABLE XIII

Project	Gross Floor Area in square feet	Rehabilitation Construction Costs <sup>1</sup>	Rehabilitation Construction Costs per gross square foot
1	3,754	\$ 47,797	\$12.70
2	4,380	49,059	11.20
3	3,835	48,154	12.50
4	4,220	52,021	12.30
5	7,380	91,512	12.40
6	7,670	94,156	12.30
7	13,240	164,732	12.40

<sup>1</sup>See Table XI

## Construction Efficiencies With Experience

Over the course of the project, SECD's construction operations became more efficient. The resultant savings, however, were offset by two factors — rising costs of labor and materials, and rehabilitation of a more extensive nature with greater replacement of old materials and finishes. Table X indicates that there was a 13% rise in prevailing wage rates during the course of the study. During this time, material costs are estimated to have gone up at the annual rate of 3% per year. If we assume that labor is 60% and material 40% of total construction costs, then construction cost rates on Project 7 can be said to have been 10.3% higher than on Projects 1 and 2, 9.4% higher than on Projects 3 and 4, 5.6% higher than on Project 5 and 4.6% higher than on Project 6. Table XVI indicates rehabilitation construction costs and gross square foot costs of the projects standardized to the labor and material price level of Project 7. The table indicates that with one exception, square foot costs went down on each successive project. Another factor which offset the increased efficiency of SECD's operations was the more extensive job done with each project. It was found more costly to attempt to repair old doors and trim than to replace them. It was difficult to define which finishes were to remain, and even though old finishes were saved, they were often badly damaged in the course of

TABLE XIV

## UNIT CONSTRUCTION COSTS PER SQUARE FOOT BY HOUSE

House	Gross Floor Area in square feet	Rehabilitation Construction Costs <sup>1</sup>	Rehabilitation Construction Costs per gross square foot
1	3,754	\$47,797	\$12.70
2	4,380	49,059	11.20
3	3,835	48,154	12.50
4	4,220	52,021	12.30
5A	3,690	45,756	12.40
5B	3,690	45,756	12.40
6A	3,835	47,078	12.30
6B	3,835	47,078	12.30
7A	3,835	45,534	11.90
7B	3,835	54,968	14.30
7C	5,570	64,230	11.30

<sup>1</sup> See Table XII

the work and had to be replaced. The result was that SECD adopted on its later projects a policy of stripping out nearly all existing plaster and replacing all existing wood doors and trim. This more complete renovation job cost more money but produced a more satisfactory product.

### Estimating Costs

SECD had difficulty in accurately estimating the cost of the work for the initial projects. The quantities of studding and plaster were underestimated, partly because salvage of existing work was over estimated. A number of carpentry items were underestimated such as the rebuilding of the winder stairways and the repair of exterior trim. Only with experience could the Corporation learn to anticipate the kinds of problems that would be encountered and to accurately allow for these in construction estimates. Over the course of the

## REHABILITATION CONSTRUCTION COSTS

TABLE XV

UNIT CONSTRUCTION COSTS PER APARTMENT AND PER FHA ROOM  
BY PROJECT

Project	Construction Costs <sup>1</sup>	No. of Apartments	Construction Costs		Construction Costs per FHA room	
			FHA room count	per apartment		
1	\$ 47,797	5		\$ 9,600	16.5	\$2,900
2	49,059	5		9,800	17.5	2,800
3	48,154	5		9,600	19.5	2,470
4	52,021	5		10,400	20.0	2,600
5	91,512	9		10,200	41.0	2,230
6	94,156	9		10,500	38.0	2,470
7	164,732	12		13,700 <sup>2</sup>	63.5	2,590

<sup>1</sup>See Table XI<sup>2</sup>Project with larger proportion of three and four-bedroom apartments.

experiment, SECD raised unit costs and estimates to conform to its actual experiences on the projects, and FHA came to accept these higher estimates of cost. It is noted that rehabilitation cost estimates given to SECD by the BRA at the beginning of the study were entirely out of line with the actual experiences of the Corporation. These optimistic estimates of cost by the public agency staffs and others raised questions as to the reliability of SECD estimates. However, as more actual rehabilitation took place, the high cost of South End row house rehabilitation began to be recognized by more and more people. Table XVII indicates SECD's estimate of cost and FHA's estimate of cost on the seven projects. SECD's final estimate on Projects 1 through 4 were much higher than those indicated in its initial submission to FHA. SECD's estimate on Projects 5 and 6 as indicated in Table XVII are the revised estimates submitted to FHA after FHA had completed feasibility processing. FHA, with one exception, allowed costs which were less than SECD's estimates.

TABLE XVI

**UNIT CONSTRUCTION COSTS PER SQUARE FOOT  
STANDARDIZED TO WAGE AND MATERIAL COST LEVEL OF PROJECT 7  
BY PROJECT**

Project	Gross Floor Area in square feet	Standardized Rehabilitation Construction Costs	Standardized Rehabilitation Construction Costs per gross square foot
1	3,754	\$ 52,800	\$14.10
2	4,380	54,200	12.40
3	3,835	52,800	13.80
4	4,220	57,100	13.50
5	7,380	96,700	13.10
6	7,670	98,600	12.80
7	13,240	164,732	12.40

#### Comparisons of Rehabilitation Costs

It is not easy to compare rehabilitation costs of South End row houses with rehabilitation of different kinds of structures. Currently underway is a very large residential rehabilitation program in the Washington Park area of Boston. Under this program, some 3,000 apartments are being rehabilitated. The cost of the rehabilitations is being financed with mortgage loans insured by FHA under Section 221 (d) (3). The structures being rehabilitated are 40 years old, three and four-story apartment houses which, though in bad condition through lack of maintenance, are structurally sound and require a minimum of structural or partition changes. The apartments were built originally for middle and upper-income families. The room sizes are ample and the buildings have standard ceiling heights and suitable apartment layouts. New techniques to resurface old partitions with dry-wall have been developed for these projects. The rehabilitation of these apartments will cost \$5,000 to \$8,000 per apartment. This kind of rehabilitation is clearly different from the kind of work done by SECD in reconstructing South End row houses. One is modernization, the other a reconstruction.

## REHABILITATION CONSTRUCTION COSTS

TABLE XVII

COMPARISON OF SECD AND FHA REHABILITATION CONSTRUCTION COST ESTIMATES<sup>1</sup>

Project	SECD Estimated Costs <sup>2</sup>	FHA Allowed Costs <sup>3</sup>	Actual Costs <sup>4</sup>
1	\$ 38,384	\$ 36,214	\$ 43,488
2	36,638	34,790	44,634
3	38,300	36,104	43,813
4	38,635	36,363	47,328
5	72,250	72,690	83,248
6	78,605	77,334	85,656
7	155,545	150,628	151,373

<sup>1</sup> Costs do not include allowances for general overhead and profit or change orders.

<sup>2</sup> In revised FHA 2013 in projects 1-6; in original FHA 2013 in project 7.

<sup>3</sup> Builders general overhead and profit must be added to amounts shown in this column to give total construction costs allowed by FHA in the mortgage loan.

<sup>4</sup> See Table XI.

An alternative to rehabilitation is clearance and new construction. It is interesting to note therefore the replacement costs of SECD's projects as estimated by FHA in its feasibility analysis. (See Table XVIII) In every case, the actual rehabilitation costs were considerably below the estimated cost of new construction.

There is no doubt that rehabilitation construction costs of South End row houses are unique to that house. There are, however, a number of cities and towns across the nation which have residential areas developed in the last century with large single family homes. SECD's experience in rebuilding South End row houses may be useful, for it is a warning that the costs of converting older homes into FHA apartments may be much higher than one would like to believe.

## REHABILITATION CONSTRUCTION COSTS

TABLE XVIII

REHABILITATION CONSTRUCTION COSTS COMPARED TO FHA ESTIMATE  
OF NEW CONSTRUCTION REPLACEMENT VALUE

Project	Rehabilitation Construction Costs <sup>1</sup>	FHA Estimate of Replacement Value
1	\$ 47,797	\$ 50,815
2	49,059	73,944
3	48,154	60,909
4	52,021	59,541
5	91,512	118,151
6	94,156	123,188
7	164,732	198,606

<sup>1</sup>Includes allowance for builder's overhead and profit (See Table XI).



REHABILITATION CONSTRUCTION COSTS



# 5

## MORTGAGE FINANCING, DEVELOPMENT COSTS, AND RENTS

In this chapter we shall review the financing of the projects, the development costs of the projects, and describe and analyze rents achieved.

### FHA MORTGAGE FINANCING

The grant application contemplated that various mortgage financing schemes would be used. However, as previously discussed, mortgage financing was limited to FHA loans and the only FHA loans available when the program started were loans insured under the provisions of Section 221 (d) (3). This program under which below-market interest rate mortgage loans are available to non-profit corporations was one of the means by which low rents were to be achieved in the study. All the projects were financed under this program. The interest rate on all the project mortgage loans was 3% after final closings and the terms of the loans were 33 years 9 months on the first six projects, and 40 years on the seventh project.

When the study started in 1964, the less complicated FHA Section 220 program was not available because the South End had not been certified as an urban renewal area. This did not occur until September 1966. In the one and one-half years following certification, FHA insured thirteen Section 220 mortgage loans in the South End. Regular lending institutions have made some conventional mortgage loans on rehabilitated property in selected areas of the South End, at the usual interest rate and for terms up to 25 years. However, the rents in rehabilitated houses financed with market interest rate mortgage loans have been well beyond the means of low-income families. A major real estate office in the area quotes one-bedroom apartments from \$120.00 to \$150.00 per month, two-bedroom apartments from \$150.00 to \$250.00 per month, and three-bedroom apartments from \$190.00 to \$350.00 per month. More recently, direct 3% loans have been available from the U.S. Government pursuant to Section 312 of the National Housing Act. The term of these mortgages is limited to 20 years. The resulting debt service factor of 6.67% is substantially higher than the

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

debt service factor of 4.715% on a 33 year 9 month mortgage loan under Section 221 (d) (3). Even though the Section 312 program allows savings in construction costs (reduced architectural requirements and no prevailing wage requirements on projects of less than eleven units), the savings in rents due to reduced construction costs are exceeded by the additional rents needed to cover the 6.67% debt service.

Because FHA would not insure under one mortgage loan row houses that were not within one block of one another, individual mortgage loans were required to finance the rehabilitation of each row house or group of houses of the Project. In a sense, the study became a test of how a non-profit corporation might develop small projects of five to twelve units under FHA multi-family project procedures and whether this would be found to be practical as the non-profit corporation gained experience. The staff of FHA cooperated and tried to make the project a success. However, the results of the study clearly indicate that it is not practical to finance small projects under FHA multi-family project procedures, which are intended for, and only justified on, large projects.

Table XIX gives the dates on which the various phases of mortgage loan processing were completed for each of the seven housing projects. It took several months to select properties and file the initial preapplication analysis form (FHA No. 2012). The table indicates that it took eleven to sixteen months thereafter to receive the commitment. Four months of that time was used by SECD's architect to prepare working drawings and for SECD to make cost estimates and submit the applications for insurance commitment. FHA took seven to nine months to process the applications and issue the commitment. In all, it took approximately twelve to eighteen months to receive a commitment from FHA after a project had been initiated. The administrative costs expended by SECD in connection with this lengthy processing was out of proportion to any fee allowed by FHA and recoverable from the mortgage loans. The cost of staff salaries and administrative expenses in connection with building department approvals, processing the loan applications, arranging for and closing the loans, were paid for the most part from the HUD grant and SECD funds. (See Table XX) It is estimated that \$90,000 of such funds were expended for these purposes which, if prorated equally between the projects, is \$12,900 per project. This equal allocation is not unreasonable. The first four projects involved

TABLE XIX

## COMPLETION DATES IN CONNECTION WITH FHA LOAN PROCESSING

Project submitted	FHA 2012 <sup>1</sup>	Commitment requested	FHA 2013R <sup>2</sup>	FHA feasibility completed	Revised FHA 2013R submitted	Commitment issued	Initial closing	Start of construction	Occupancy	Final Closing
1	11/2/64 <sup>3</sup>	12/1/64 <sup>4</sup>	12/17/64	7/6/65	7/9/65 <sup>5</sup>	10/8/65	1/14/66	10/27/65	6/3/66	1/30/67
2	-	12/1/64 <sup>3</sup>	12/17/64	7/15/65	7/30/65 <sup>5</sup>	10/8/65	1/14/66	10/27/65	8/25/66	1/30/67
3	11/2/64 <sup>3</sup>	12/1/64 <sup>4</sup>	12/17/64	7/15/65	7/30/65 <sup>5</sup>	10/22/65	1/12/66	1/13/66	10/24/66	8/7/67 <sup>6</sup>
4	11/2/64 <sup>3</sup>	12/1/64 <sup>4</sup>	12/17/64	7/15/65	7/30/65 <sup>5</sup>	10/22/65	1/12/66	1/13/66	12/2/66	8/7/67 <sup>6</sup>
5	8/24/65	10/25/65	1/24/66	6/9/66 <sup>7</sup>	6/23/66	9/6/66	10/28/66	10/28/66	7/26/67	3/25/68 <sup>6</sup>
6	8/24/65	11/15/65	3/14/66	7/11/66	8/12/66	12/29/66	1/26/67	1/26/67	11/28/67	3/25/68
7	9/13/66	12/13/66 <sup>8</sup>	3/10/67	8/14/67	--	11/16/67	12/18/67	11/22/67	6/3/68	1/15/69

<sup>1</sup>FHA 2012 – Request for Pre-Application Analysis of Multifamily Housing Proposal.<sup>2</sup>FHA 2013R – Application for Project Mortgage Insurance.<sup>3</sup>FHA 2012 was not submitted at FHA's request, only architectural layouts and site plans submitted.<sup>4</sup>Location approved.<sup>5</sup>A second revised application submitted in September 1965 after National Housing Act was amended.<sup>6</sup>Reprocessing delayed final closing.<sup>7</sup>Commitment issued which was not accepted by SECD.<sup>8</sup>Delayed 6 weeks awaiting allocation.

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

TABLE XX

## PROCESSING COSTS

Project	Legal Costs <sup>1</sup>		Organization and Processing		
	Allowed in Loan	paid by Grant and SECD <sup>2</sup>	Allowed in Loan	paid by Grant and SECD	Total
1	\$235	\$807	—	\$12,900	\$13,942
2	230	737	—	12,900	13,867
3	234	831	—	12,900	13,965
4	300	834	—	12,900	14,034
5	600	281	—	12,900	13,781
6	530	45	—	12,900	13,475
7	994	—	\$2,006	10,894	13,894

<sup>1</sup> Does not include Title and Recording Costs<sup>2</sup> Grant portion paid under Special Services Contract

the full time of the staff during the first year of the program. Projects 5 and 6 involved several resubmissions of FHA applications. If anything, Project 7 with three houses and the most apartments was the least costly to process because construction costs were accurately estimated and SECD was familiar by this time with FHA requirements. SECD did employ legal counsel to act as its attorney in the initial and final closings. On Projects 1 through 4, legal counsel was asked to review the original disposition agreements with the Boston Redevelopment Authority (BRA) and to present appeals to the Board of Appeals. On the initial projects, outside legal counsel prepared most of the legal documents required for the closings. On subsequent projects, 5 through 7, the SECD staff prepared many of these papers. SECD's attorney also served as the mortgagee's attorney with the costs paid by SECD as mortgagor. All the FHA commitment applications were prepared by SECD staff as well as all contractor's requisitions for construction loans, contract approvals, financial exhibits, rent schedules and cost certifications. Table XX indicates legal and processing costs for the projects. A portion of these costs were allowed by FHA and paid from mortgage proceeds. Total legal and processing costs expended were equivalent to 16% of the aggregate amount of the seven project loans.

## Processing Delays

The extended time to process and obtain the mortgage loans can be associated with five things; one, FHA difficulties with an experimental program, two, SECD's lack of experience with FHA's programs, three, inaccurate estimates of construction costs, four, difficulties in obtaining allocations of below market interest rate funds and five, bureaucracy.

A special program such as this study project ran counter to many of FHA's standard requirements. Even though SECD was working under a grant from FHA's parent agency, there was hesitancy about insuring SECD's projects prior to the certification of the South End as an urban renewal area. After several months of discussions, officials of HUD/FHA in Washington intervened and recommended that the project be treated as experimental housing. The Commissioner of FHA authorized that the first five projects be insured under Section 221 (d) (3) pursuant to the experimental section of the National Housing Act, Section 233. The Commissioner further authorized that FHA Minimum Property Standards for Urban Renewal Rehabilitation (FHA No. 950) be applied to these projects. These decisions moved the program forward although there were additional delays in the processing as FHA reviewed special procedures of Section 233. Subsequently, there was a delay in Project 6 when the Boston office of FHA refused to underwrite any projects beyond the original five authorized by the FHA Commissioner. After a six week delay, FHA was persuaded to continue underwriting the study projects. BRA assisted SECD in this effort. As it turned out, FHA decided that the projects were not truly experimental in design and the projects were insured under the usual provisions of Section 221 (d) (3).

Delays were also encountered as FHA staff had difficulties reconciling their experience on large projects with the rehabilitation and operating costs which SECD was discovering on small, scattered row house projects. FHA did not like to encourage experimentation when it was not sure of the economic soundness of the projects. Most Section 221 (d) (3) multi-family housing projects have locational identity which sets them apart from their immediate neighborhood and isolates them to some degree from adverse neighborhood conditions. Their subsidized rents make the apartments marketable. On the other

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hand, FHA has a natural uneasiness when underwriting small rehabilitation project in a blighted area. SECD's determination to complete its commitments under the grant encountered resistance from some of the FHA staff people who questioned the feasibility of the program.

A second cause for delay in processing commitment applications was SECD's inexperience with FHA's requirements. Not knowing to whom one should talk or the number of an FHA form or its last revision date, caused delays. A developer must anticipate FHA's interpretation of the terms on the forms and present the information accordingly. There are estimates and determinations which are made early in the processing which have a bearing on procedures which occur later in the project's development. For example, the manner in which the developer makes out certain forms for the initial closing will affect the manner in which he will be able to cost certify the project. If the developer is unfamiliar with cost certifications, he will probably make errors of judgment in completing the documents for the initial closing. In short, the developer probably has to go through the entire processing cycle several times before he is sufficiently conversant with FHA's procedures to avoid delays on his own account.

A third area of delay in the processing was the lack of precise knowledge of rehabilitation costs. One of the inherent problems in FHA mortgage loan processing is that preliminary applications are requested by FHA prior to the completion of working drawings and specifications. This is done, no doubt, to prevent the developer from investing in architectural services on projects which HUD/FHA finds it cannot insure. On the other hand, it frequently causes the developer to initiate the project on an incorrect estimate of costs which invariably results in delays later on. In SECD's case, the corporation established rents which it hoped to achieve. On the basis of these rents, it set up allowances for construction costs. These allowances proved to be totally inadequate and had to be raised with each step in the processing. It was with some difficulty that FHA was convinced to accept these higher costs and this was a source of delay. It required reprocessing of the documents and this was burdensome for FHA.

The first submission to HUD/FHA for Project 1 carried an allowance for construction of \$22,420. This was based upon preliminary floor layouts of the apartments and on the architect's

estimate of cost. It was also consistent with construction estimates suggested by BRA. As the plans were developed in connection with HUD/FHA's review, the architect revised his estimate of costs to approximately \$27,000. Further determination of building law requirements indicated that costs would exceed \$30,000. After the drawings had been completed, bids were requested from contractors and a construction estimate of \$35,000 was submitted to FHA. FHA proceeded to complete its feasibility analysis of the project on this estimate of costs. As mentioned in an earlier chapter, an additional revision of cost was required when the Congress amended the National Housing Act and required that prevailing wages be paid on non-profit sponsored 221 (d) (3) projects.

Processing of Project 5 ran into difficulties as construction cost estimates were revised in the light of the Corporation's experience on the initial projects. Processing of Project 5 was delayed because HUD/FHA issued a commitment which SECD could not accept because construction costs as well as other costs were below those which SECD knew would be necessary in the light of its experience. A revised application was again submitted and a commitment subsequently issued.

Project 6 had the longest processing time. This was partially caused by revisions in construction costs and by a relatively small design change made by SECD on recommendations of SECD's board and FHA's architectural staff. The design change involved elimination of one efficiency apartment. This change was incorporated in a revised application which was submitted after FHA's feasibility processing had been completed. It took more than four months to receive the commitment thereafter.

At the time SECD filed the application for Project 7, it was conversant with FHA's requirements and knowledgeable about construction costs. The Corporation submitted a complete application and hoped that FHA would process the application within three months. It required, however, approximately seven months. High rehabilitation costs and estimated operating expenses slowed FHA feasibility approvals.

A fourth source of delay in the FHA processing is the allocation of below-market interest rate funds. When the HUD grant was awarded in June 1964, HUD made a general allocation of

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

\$455,000 of below-market interest rate funds for the study project. This allocation was considered sufficient to cover the entire experiment. It was made in an effort to hold down the interest rates for the projects. The below-market interest rate in June 1964 was 3-3/8% and was rising with the cost of Federal money. Because development costs for the projects were considerably higher than anticipated, the original allocation was not sufficient to cover the complete program. In May 1966, a request was submitted to FHA for \$500,000 of additional below-market interest rate funds, to cover the seventh project of the study and subsequent projects which were then being planned by SECD. Even though these funds were required to complete a HUD program and the request supported by the BRA, it took months to receive this allocation. After it was received, there were additional delays in approving distributions from the general allocation. A major portion of the processing delays in Project 7 involved the allocation of below-market interest rate funds.

A similar delay was experienced in the reprocessing of the mortgage loan for Project 5. The mortgage loan for this project was increased \$3,700 to cover construction betterments and it required three months to receive this small allocation at a time when the U.S. Government was proposing that the production of low and moderate income housing in the United States be doubled.

In projects subsequent to the HUD study project, SECD has experienced delays in receiving allocations. The original allocations are established when a housing project is first initiated and if there are increases in cost as the project goes forward, supplementary allocations must be obtained. Processing is halted at each stage until the allocation is received. When one considers how the airlines allocate seats on their flights and compensate for the cancellations, the allocation of below-market interest rate funds by the Department of Housing and Urban Development seems cumbersome to say the least. Had FHA allowed a contingency in construction cost estimates, some of the supplementary allocations could have been avoided.

The last difficulty in HUD/FHA processing is bureaucracy itself. The problems of standard rules and regulations are inevitable whenever the Government deals with the general public. This is particularly true where an experimental program is being carried out. In some cases special permissions were received to change these

requirements and in others, FHA waived their standard regulations. In a number of situations, the Boston office of FHA was not authorized to accept revisions in the standard FHA forms and modifications had to be negotiated with officials of HUD/FHA in Washington. The regulatory agreement by which HUD/FHA controls the operation of multi-family projects, presumes that each housing project will be developed and operated by a separate corporate entity. This was not the case with SECD and it took weeks of negotiations with officials of HUD/FHA in Washington to resolve this question. SECD manages its own projects and it took time to persuade FHA that the Corporation could not write a management agreement with itself. Requirements for test borings and for written approval of the mailbox by the Post Office Department were issued, only to be subsequently waived. There is always a lot of paper when one does business with the Government. Six and sometimes eight sets of final drawings and specifications were supplied to HUD/FHA whereas SECD used only six sets to build the houses. Twenty-five copies of the trade payment breakdown were supplied, of which twenty were returned to SECD. Three copies of the complete Boston Zoning Code were filed with HUD/FHA at each initial closing. The initial closings required the preparation and signing of thirty-five different documents and the attention of four to five lawyers, a banker, a bondsman, an architect, SECD staff and others. All this for a \$50,000 loan on a row house.

Two things are of note with respect to the processing of the project loans. Firstly, HUD/FHA did not simplify or speed up multi-family commitment processing even though there was genuine cooperation between FHA and SECD. This notwithstanding that HUD was paying most of the administrative costs. This is a significant commentary on the overall HUD/FHA underwriting system and its procedures. Secondly, the cost of FHA loan processing is not proportional to the size of a project. Small projects go through most of the same requirements as larger projects. On a per apartment basis, processing costs of a large project are very much less than on a small project.

Extended time to process the commitments is not only costly in administrative expense but also affects the feasibility of projects if construction costs are rising, as they were during the study project. If these increases are great enough, a non-profit developer

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must refile its application and start the FHA processing over again if a loan equal to 100% of development costs is to be obtained. Difficulties occur after the projects are constructed and occupied if there are delays in completing the final closing. After the final closing the interest rate on the loan is reduced to the below-market interest rate. Before that time it is at market rate. If there are delays in completing the final closing, the higher interest rate continues during the interim operating period and the project will suffer interest costs which were not anticipated in the rent. This situation occurred in Project 5. The difference in interest rate cost 22% of the project's rental income during the interim operating period while awaiting FHA's reprocessing of the mortgage loan.

### Development Costs

Table XXI lists development costs for the projects based upon actual costs and fees permitted in the mortgage loans and Table XXII indicates development costs if value of volunteer labor, full builders general overhead and fee, and expenditures of grant funds are included. Construction costs on SECD's books do not include the contribution of the Neighborhood Youth Corps (NYC) and the Just-A-Start program and include builders general overhead and fee only to the extent that it was within FHA cost limitations. On most projects, there is a period when the project is occupied before the official end of the construction period during which time some of the carrying costs are paid from mortgage proceeds. A net rental income surplus may develop and this can be credited to project costs. The high costs of construction loan interest, taxes and insurance on Project 5 was due to an extended period of occupancy prior to the official end of construction. In this case, FHA did not wish to give a final approval until the public sewer, over which SECD had no control, was improved. The high carrying costs for the project were offset to some degree by the net rental income earned during the same period.

A purpose of the Section 221 (d) (3) program is to allow non-profit sponsor-mortgagors to obtain a loan which covers the entire development cost of a project. This is important in view of restrictions on the sale of the project after it is constructed. It can be sold only with FHA's approval and only then to an approved non-profit or

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

TABLE XXI

## DEVELOPMENT COSTS BASED UPON ACTUAL COSTS AND FEES ALLOWED IN THE MORTGAGE LOANS

Item	Project						
	1	2	3	4	5	6	7
Construction costs <sup>1</sup>	\$43,193	\$44,317	\$43,603	\$46,983	\$ 83,281	\$ 86,639	\$162,532
Architect	3,680	3,535	3,665	3,691	3,750	3,750	7,200
Estimator's fee	—	—	—	—	—	—	500
Construction loan interest	670	759	1,258	1,147	2,597	1,921	4,401
Real estate taxes <sup>2</sup>	243	417	203	581	1,000	832	736
Liability and hazard insurance <sup>2</sup>	114	126	164	172	371	298	576
FHA fees	359	346	363	368	760	771	1,425
Financing costs <sup>3</sup>	591	573	588	600	1,246	1,318	3,776
Title and recording	310	324	389	408	907	898	1,035
Legal	270	267	265	334	881	575	994
Processing	—	—	—	—	—	—	2,006
Net rental income during construction	—	(307)	(833)	(560)	(1,864)	—	—
As is value	232	110	121	331	10,471	8,398	719
	\$49,662	\$50,467	\$49,786	\$54,055	\$103,400	\$105,400	\$185,900

<sup>1</sup> Actual site costs plus general overhead and fee to the extent that total did not exceed allowed FHA costs. No overhead and fee on projects 1-4; \$33 and \$1,783 general overhead on Projects 5 and 6 respectively; full general overhead and fee on Project 7. Costs do not include value of free labor.

<sup>2</sup> During Construction.

<sup>3</sup> Includes 1% Government National Mortgage Association fee.

<sup>4</sup> Includes 1% AMPO Funds.

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

TABLE XXII

## DEVELOPMENT COSTS IF VALUE OF VOLUNTEER LABOR, BUILDERS GENERAL OVERHEAD AND FEE, AND GRANT FUNDS ARE INCLUDED

Item	Project						
	1	2	3	4	5	6	7
Construction costs <sup>1</sup>	\$47,797	\$49,059	\$48,154	\$52,021	\$ 91,512	\$ 94,156	\$164,732
Architect	4,580	4,435	4,565	4,591	4,130	4,130	7,580
Estimator's fee	—	—	—	—	—	—	500
Construction loan							
interest	670	759	1,258	1,147	2,597	1,921	4,401
Real estate taxes <sup>2</sup>	243	417	203	581	1,000	832	736
Liability and hazard							
insurance <sup>2</sup>	114	126	164	172	371	298	576
FHA fees	359	346	363	368	760	771	1,425 <sup>(4)</sup>
Financing costs <sup>3</sup>	591	573	588	600	1,246	1,318	3,776
Title and recording	310	324	389	408	907	898	1,035
Legal	1,042	967	1,065	1,134	881	575	994
Processing	12,900	12,900	12,900	12,900	12,900	12,900	12,900
Net rental income							
during construction	—	(307)	(833)	(560)	(1,864)	—	—
As is value	232	110	121	331	10,471	8,398	719
	\$68,838	\$69,709	\$68,937	\$73,693	\$124,911	\$126,197	\$199,374

<sup>1</sup>See Table XII.<sup>2</sup>During Construction<sup>3</sup>Includes 1% Government National Mortgage Association fee.<sup>4</sup>Includes 1% AMPO Funds.

cooperative entity. Any equity investment in the projects becomes unrecoverable until the FHA long-term mortgage loan has been paid off. However, SECD had agreed to invest equity where necessary and this was required on the initial projects where construction cost overruns occurred. Table XXIII indicates the actual mortgage loan amounts, the equities invested by SECD, the debt service and the debt service as a percentage of project rental income.

In order that the study project not lack working capital, HUD advanced a revolving loan which, together with the non-Federal funds, was intended to provide working capital for the project. However, with financing limited to Section 221 (d) (3) mortgage loans, the need for working capital was substantially reduced. HUD/FHA required that the initial closings take place and, accordingly, money for construction was advanced from the mortgage loans. Prior to the initial closings, "front money" was required for acquisition and architectural costs. These are indicated in Table XXIV. At the initial

TABLE XXIII  
FINANCING OF PROJECTS

Project	Development Costs <sup>1</sup>	Mortgage Loan	Equity Provided by SECD	Per Annum Debt Service on Mortgage Loan	Debt Service Cost as a Percent of Rental Income
1	\$ 49,662	\$ 47,300	\$2,362	\$2,230	45%
2	50,467	45,800	4,667	2,160	42%
3	49,786	49,400	386	2,350	47%
4	54,055	50,900	3,155	2,421	48%
5	103,400	103,400	—	4,877	48%
6	105,400	105,400	—	4,970	47%
7	185,900	185,900 <sup>2</sup>	—	8,110 <sup>2</sup>	44%

<sup>1</sup>See Table XXI

<sup>2</sup>Initial FHA insured project mortgage loan was in the amount of \$188,800. The note was reduced at the final closing to the amount of actual development costs. FHA required, however, that debt service remain as calculated for original loan amount.

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

closings, these costs were advanced to the Corporation from the mortgage loans.

The mortgagee on all the projects was The First National Bank of Boston. The Bank agreed to make construction financing available for the study program and this was helpful. The bank was also helpful in expediting submissions to FHA and it provided the loans at minimum costs. Interest on the construction financing of Projects 1 through 6 was 5-1/4% with a 1/4% placement fee and on Project 7, 6% with no placement fee. Financing costs in Table XXII included a 1% fee for the Government National Mortgage Association which purchased the mortgages at the time of the final closings. On Project 7, 1% was included in the mortgage loan to provide working capital to make the project operational, called AMPO.

TABLE XXIV

### DEVELOPMENT EXPENDITURES PRIOR TO INITIAL CLOSING OF LOANS<sup>1</sup>

Project	Architectural Services <sup>2</sup>	Other <sup>3</sup>	Total
1	\$4,570	\$ 1,960	\$ 5,630
2	4,423	1,772	5,295
3	4,555	1,420	5,075
4	4,581	1,308	5,389
5	4,130	13,127	17,257
6	3,293	11,130	14,423
7	7,580	6,004	13,528

<sup>1</sup> Not including mortgage loan processing costs.

<sup>2</sup> Includes consultant studies paid by Grant.

<sup>3</sup> Includes purchase price, temporary protection of property, hazard insurance, real estate taxes, cleaning out furniture, and FHA fees.

## Rents

Table XXV indicates the rents on the seven housing projects. The rents on the initial projects are lower than those charged on the subsequent projects, particularly Project 7. These differences in rent are accounted for by the following factors. On initial projects, the construction costs were underestimated and the Corporation paid for these cost overruns from its own capital. These equity investments earn no return and therefore subsidize the project's rents. Including larger units in a project increases the rents on all apartments. Projects 5 and 6 had one or two larger units and in Project 7, one-half of the apartments were three and four-bedroom apartments. Rents included cooking gas in Projects 5 and 6. All utilities are included in the rents in Project 7.

There is a tendency to consider rents on low-income housing projects as a function only of construction costs. This of course fails to take into consideration the other components that make up the rent dollar. As indicated in Table XXIII, debt service on the projects represents less than one-half of the project rents. The feasibility of a rental housing project is based upon projected rents and these in turn depend more on operating expenses than upon construction costs.

Operating costs on small scattered projects such as those developed by SECD are difficult to estimate. SECD, as most non-profit housing developers, set initial operating costs at minimum levels so as to achieve lowest possible rents. FHA for their part estimate operating costs at minimum levels in order to achieve "political rents" and to insure the marketability of the apartments. Lower vacancy rates and minimum repair costs in the initial years are assumed to be contingencies against operating losses. During the first two or three years, decorating costs are low and some maintenance is taken care of under construction guarantees. Table XXVI lists the operating costs estimated by SECD for each project in its applications to FHA and the costs used by FHA in the feasibility analysis and allowed by FHA in initial project rents.

One of the aids for low-income housing which is available to developers of FHA Section 221 (d) (3) housing is that the

MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

TABLE XXV

AVERAGE PROJECT RENTS

Project	Efficiency	One bedroom	Two bedroom	Three bedroom	Four bedroom	Average FHA Rooms per family unit
1	—	\$79.33	\$86.00	—	—	3
2	\$65.00	85.00	92.00	—	—	3.4
3	—	79.00	91.00	—	—	3.3
4	65.00	—	89.50	—	—	3.9
5	68.00	—	95.00	—	\$118.50	4.7
6	—	84.66	99.20	\$140.00	—	4.22
7	—	92.00	116.75	144.40	166.00	5.29

On Projects 1 through 4, rents include heat and hot water

On Projects 5 through 6, rents include heat, hot water and cooking gas

On Project 7, rent includes all utilities

City of Boston grants the projects real estate tax relief. The City of Boston Assessing Department assesses Section 221 (d) (3) projects at values which produce a real estate tax equal to 15% of the gross rental income. This arrangement was made for all the study projects. It will be a significant factor in the long term for the projects, as property values appreciate in the South End.

The chart on page 6-7 indicates the uses of current FHA allowed rental income on Project 7. Consistent with FHA's project analysis, depreciation is not considered an expense to be covered by the rents.

The first four projects of the study were rented prior to the leased housing program of the Boston Housing Authority (BHA). While the earlier projects were rented to low-income families, it was only because the families were willing to pay an unusually high portion of income for shelter. It was found that a number of families receiving public assistance are given a prescribed allowance for rent, which assistance was increased when the family moves into standard housing. Under the circumstances, some of the families were able to

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

TABLE XXVI

ESTIMATED ANNUAL OPERATING EXPENSES<sup>1</sup>

Project	SECD Estimated Expenses <sup>2</sup>	FHA Allowed Expenses <sup>3</sup>
1	\$2,233	\$1,997
2	2,321	2,262
3	2,221	2,111
4	2,217	2,099
5	4,254	3,980
6	4,349	4,123
7	8,836	7,778

<sup>1</sup> Real estate taxes, liability and fire insurance, fuel, electricity, water, janitorial, decorating and repairs.

<sup>2</sup> As submitted by SECD in commitment application.

<sup>3</sup> As allowed in FHA commitment.

achieve standard housing without substantially affecting their family budgets. As soon as the leased housing program pursuant to Section 23 of the National Housing Act became available, SECD adopted a policy of leasing apartments to the BHA where the family would otherwise have to pay an excessive proportion of income for rent. Increasingly, apartments have been leased to BHA.

At present, thirty-three of the fifty apartments have been leased to the BHA. In the thirty-three leased units, the BHA is paying an average of 44% of the rent and the family pays the balance. A family must meet the BHA's qualifications before they are eligible for a leased housing unit.

## Factors Influencing Rents

The general public as well as most low-income occupants are unaware of the extent of the subsidies in FHA financed housing. Because the FHA rents for new and substantially rehabilitated

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

Section 221 (d) (3) housing are often about the same as that for other housing in an area, such as the South End, few people acknowledge the subsidy in the rent even though the housing is considerably more desirable. Table XXVII indicates some of the factors which influence rent in the study projects. Clearly, the rent subsidy of public housing leasing is the most significant. The mortgage loan interest subsidy is a substantial factor. Many believe that reduced construction costs are the way to reduced rents, yet a 10% reduction in construction produces only a 5% reduction in rents. The full cost of processing the mortgage loans would have increased rents approximately 4% on Project 7.

This would have pushed the rents for Project 7 beyond the then currently allowed Section 221 (d) (3) rents. The maximum allowed rents were as follows: efficiency \$95., one-bedroom \$115., two-bedroom \$135., three-bedroom \$155., and four-bedroom \$176.

### Advantages and Disadvantages of Non-Profit Housing

The contribution of a non-profit corporation to the development and operation of the properties is difficult to evaluate. Non-profit corporations can obtain 100% financing on Section 221 (d) (3) housing. A non-profit corporation can have professionals on its board who provide advice and can make contacts through its board with the community and public agencies. There are however, inefficiencies in non-profit operations. A limited dividend corporation on the other hand would have to provide equities in Section 221 (d) (3) housing of at least 11% of the mortgages. For a number of community groups, this equity requirement is a significant deterrent to operating as a limited dividend corporation.

The limited dividend corporation has the advantage of being allowed a 10% general overhead and profit on the entire development cost except land. Except where the non-profit sponsor acts as the builder, the only direct costs which the non-profit can recover are legal and organizational expenses and these are limited. On the study projects, SECD acted as its own general contractor and FHA allowed in the mortgage loan a sum equal to the usual fee allowed the general contractor for overhead and profit. SECD used this allowance

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

TABLE XXVII

ILLUSTRATIONS OF LEVERAGE ON RENT<sup>1</sup>

Condition on Project 7	Assumed Change	Affect on current Project rents
The Public Housing Leased Program pays part of the rent for leased units.	If families in leased units had to pay the entire rent . . .	Their rent would increase 93%
The interest rate on the mortgage is 3%	If the interest rate were a market rate of 6-3/4%	Rents would increase 36%
The cost of abusive dam- age is not provided in the rent.	If the annual cost of repairing abusive dam- age were \$150 per apartment . . .	Rents would increase 12%
Real estate taxes are 15% of gross income.	If real estate taxes were 25% of gross income . . .	Rents would increase 10%
Construction costs are 87% of total develop- ment costs.	If construction costs were reduced by 10% . . .	Rents would decrease 5%
Fire insurance premiums are based on manual rates.	If fire insurance rates increased 25% . . .	Rents would increase 2%
The full cost of pro- cessing is not included in the mortgage loan.	If full cost of process- ing were included in mortgage loan (see Table XXIII) . . .	Rents would increase 4%

<sup>1</sup> Calculated on Project 7

## MORTGAGE FINANCING, DEVELOPMENT COSTS AND RENTS

primarily as a contingency against construction overruns. Barring construction overruns, these fees could be used to sustain the operations of a non-profit corporation if adequate fees for legal, organizational and processing work were also included in the mortgage financing. If a non-profit corporation is denied overhead allowances or required to use outside general contractors and has to employ consultants to process the applications and documents, then there is no way, other than through outside grants, for a non-profit corporation to sustain itself as a FHA housing developer. The limited dividend corporation, which can have an identity of interest with the general contractor, can sustain itself with fees generated from mortgage financing. A more significant difference between limited dividend and non-profit housing arises in connection with the use of operating losses from the project. This is discussed in the next chapter.

Cooperative development of projects such as those created under the Project would seem unlikely for low-income families. The high cost of development would mean that each family would be paying a high cost for housing in proportion to income and the small size of the projects would mean that there was little distribution of the risks. The failure of an individual cooperator to pay his share would become the financial responsibility of the other members of the cooperative. While management of the building itself might be handled by cooperative owners, there would be the burden of the FHA administrative requirements which would be difficult for the cooperators to handle without professional help.

# 6 PROPERTY MANAGEMENT

SECD discovered, as have many non-profit and other housing sponsors, that the difficulties of housing management exceed those of housing development. The development of a housing project is a once-only problem. There are architects, lawyers, and contractors who have had experience in housing development and can be employed in connection with the construction of a housing project. FHA is a source of assistance and its experience with moderate and upper-income housing is relevant to the development of other forms of housing. On the other hand, management of low-income housing has different characteristics than management of upper and middle-income housing, and there are few skilled or experienced management agents or consultants in this field. FHA is also unskilled in low-income housing operations. Many low-income families need special services and housing management must concern itself with these special needs. Inexpensive original construction and more intensive use of the property result in high maintenance costs. Rents will have generally been set at the lowest possible level so that low-income families can afford the apartments. Under the circumstances, property management is not easy. In this Chapter we shall briefly review SECD's experience in managing its rather unusual FHA projects.

When SECD completed its initial projects, it was apparent that the only feasible plan for property management was for the corporation itself to manage the properties. There were no management agents available who were experienced with FHA housing who would manage such small projects in the South End. Furthermore, SECD was interested in working out the best possible housing situation for the tenants and wanted to test various programs to see what was possible. SECD has managed projects since July of 1966.

## Leasing Policy

SECD established a leasing policy which gave preference to relocation families from the South End and established minimum qualifications for applicants. Apartments are leased on a one-year basis with a provision for a 30-day notice of termination by either

TABLE XXVIII  
CHARACTERISTICS OF SECD TENANTS

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Number of families	50
Average size of households	2.95
Families with female head of household	32
Average family income	\$3,200
Families receiving public assistance	36
Number of families who were displaced by government action	29
Number of families living previously in South End	42
Number of families who were previously in sub-standard housing	41
Families who own automobiles	4

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party without cause. A minimum number of rules and regulations were adopted with respect to the use of the apartments. Rents are paid by check or money order on a monthly basis at SECD's office. Vacancy and collection losses currently are minimal although these ranged up to 10% during the first year of management operations. This high rate was attributable to the personal difficulties of four of the original families who were asked to vacate and eventually left their apartments. On the average, two and one-half months rent was lost in terminating the leases, cleaning and re-renting these apartments. In these cases, as in others, the Corporation referred the families to the appropriate social agencies. USES is providing special services to the Corporation where social problems arise. The relocation office also provides a family follow-up service for their relocatees. However, where serious problems occurred, the social agencies were unable to resolve the family problem and SECD was involved in the rehousing of families who left their apartments. In no case has the Corporation been forced to go through formal eviction proceedings.

A question commonly asked is "Did the Corporation screen its applicants?" The answer is that the Corporation did not. When the initial apartments were completed, SECD wrote to some 30 to 35 institutions in the South End and asked for referrals for its apartments. Very few referrals were received. Initial apartments were rented primarily to applicants who had applied at SECD's office, which

is located on the main street in the center of the South End. Subsequently, the Boston Redevelopment Authority (BRA) Relocation Office, operated by United South End Settlements (USES) under contract to the BRA, referred applicants to SECD. Twenty-nine of the fifty families are relocatees. The average family income of SECD's families is \$3200 per year. Most of the families referred to the Corporation are eligible for public housing and 33 of the 50 occupied apartments have been leased to the Boston Housing Authority (BHA) for lease to a family. The BHA pays a portion of the rent and the family pays the balance. The BHA guarantees the rent and has the sole power to evict. With respect to apartments now leased to BHA, BHA is paying an average of 44% of the rent and the family pays the balance. The family's portion of the rent in apartments leased to BHA ranges from \$45 for a single-person efficiency apartment to \$69 for a four-bedroom apartment. Most of SECD's tenants were South End residents who have immeasurably improved their housing situation by moving into SECD apartments.

### Operating Expenses

Table XXIX indicates the operating budgets approved by FHA and provided in the rents and budgets which SECD believes are necessary on the basis of its operating experience to date. It is apparent from these schedules that the projects are not operating on a break-even cash basis. An overrun in operating expenses on the initial projects is the cost of electric power for the public hallway lighting and the heating equipment. This substantial overrun is partially explained by the fact that electric power for these halls and heating equipment is classified as a commercial use and the rate is approximately 70% higher than for the usual residential rate. This matter has been discussed with the local electrical utility without avail.

Current regulations of HUD/FHA require that rents include all utilities. On Project 7, a master meter is installed for the entire house and the public hall and heating room equipment power is purchased at the more favorable master meter rate. Another difficulty was encountered when it was discovered that the local electric utility does not provide a master meter service in houses where there are only

TABLE XXIX

**ANNUAL OPERATING COSTS COVERED BY FHA APPROVED RENTS AND ANNUAL OPERATING COSTS  
ESTIMATED BY SECD PER APARTMENT**

Project		1		2		3		4		5		6		7 <sup>5</sup>	
Item		FHA	SECD	FHA	SECD	FHA	SECD	FHA	SECD	FHA	SECD	FHA	SECD	FHA	SECD
a) Vacancies		\$ 69	\$ 26	\$ 71	\$ 26	\$ 70	\$ 27	\$ 71	\$ 26	\$ 77	\$ 29	\$ 83	\$ 29	\$ 108	\$ 37
b) Fuel <sup>1</sup>		98	115	120	120	116	115	108	95	103	133	97	133	118	150
c) Utilities <sup>2</sup>		41	62	41	55	40	63	41	47	43	57	38	51	103	145
d) Insurance		42	58	65	63	46	58	48	61	61	64	66	78	88	107
e) Repairs & Painting		61	135	62	135	60	135	64	135	56	148	71	148	106	160
f) Halls & Misc.		20	35	20	30	20	30	18	35	22	27	22	28	17	33
g) Management fee <sup>3</sup>		46	200	52	200	46	200	47	200	52	200	55	200	72	200
h) Reserve <sup>4</sup>		24	41	24	40	24	40	24	37	29	43	38	44	35	60
Total Operating Costs		\$401	\$ 672	\$ 455	\$ 669	\$ 422	\$ 668	\$ 421	\$ 636	\$ 443	\$ 701	\$ 470	\$ 711	\$ 647	\$ 892
Real Estate Taxes		\$137	\$ 198	\$ 144	\$ 194	\$ 140	\$ 201	\$ 142	\$ 198	\$ 157	\$ 216	\$ 166	\$ 222	\$ 231	\$ 277
Total Operating Costs and Taxes		\$538	\$ 870	\$ 599	\$ 863	\$ 562	\$ 869	\$563	\$ 834	\$ 600	\$ 917	\$ 636	\$ 933	\$ 878	\$ 1,169
Average Annual Rent		\$984	\$1,316	\$1,022	\$1,295	\$1,006	\$1,339	\$1,015	\$1,318	\$1,131	\$1,439	\$1,187	\$1,478	\$1,539	\$1,845
Operating Costs and Taxes as a Percent of Rent		55%	67%	58%	67%	56%	65%	55%	64%	52%	64%	54%	64%	57%	64%

<sup>1</sup>Projects 5, 6 and 7 fuel costs include cooking gas.<sup>2</sup>Project 7 rents include electricity.<sup>3</sup>Fee based on management of 90 apartments with per apartment cost of \$200.00 per annum.<sup>4</sup>SECD Reserve is 10% of items b, c, d, e, f.<sup>5</sup>Project 7 had 50 percent three and four-bedroom apartments.

three apartments. A residential rate for the public hall and heating equipment was achieved in this case by putting these uses on one of the apartment meters. Three meters are installed, one for each apartment, and SECD pays all of the bills.

Some of SECD's houses are heated with oil and others with gas. The cost of fuel for heat and hot water in the first houses having 5-apartments averaged \$580 per house per year. The Corporation purchases No. 2 fuel oil at 14¢ per gallon, which price does not include the cost of service. The service contract is \$25 per year per central heating unit.

Fire and liability insurance is costly in areas such as the South End. SECD has been able to get a fire and liability package policy on each of the rehabilitated houses at reasonable rates. All of SECD's houses rehabilitated under the project are on "residential streets" and are rated as individual buildings. Sometimes the rating bureau rates a row of houses as one building and the accumulated faults of all the buildings then apply to each of them. Liability insurance and fire insurance with extended coverage, vandalism, sprinkler leakage and rental loss on the completed SECD houses is about eighty cents per hundred dollars of value. SECD has had vacant, unrehabilitated houses in a mixed residential and commercial block where the manual rate was as high as \$4.50 per hundred dollars.

Care of the public halls and outside yards is difficult where buildings are in scattered locations. FHA's budget did not allow for any janitorial costs in the first four buildings except as a miscellaneous cost. Subsequent projects included an allowance of \$35 per building per year. This cannot be achieved even with the help of the tenants. The payment to the management aide is charged against this account. A cleaning and waxing of a hall costs approximately \$20 per hall per cleaning.

The cost of painting is not certain. Little painting has been necessary, except when families have moved out. However, it is clear that reasonable estimates for redecorating and repairs are in excess of amounts allowed by FHA.

Repairs can be expected to be a major problem in the upkeep of the houses. While most repairs will be small there



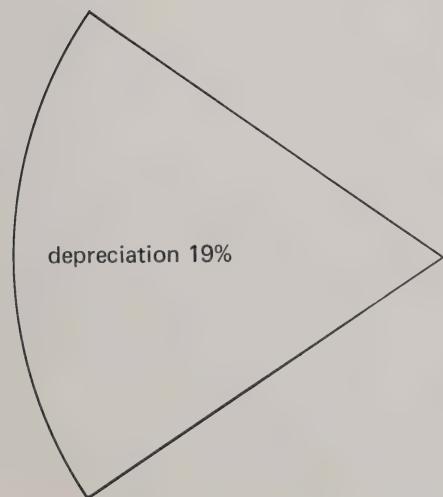
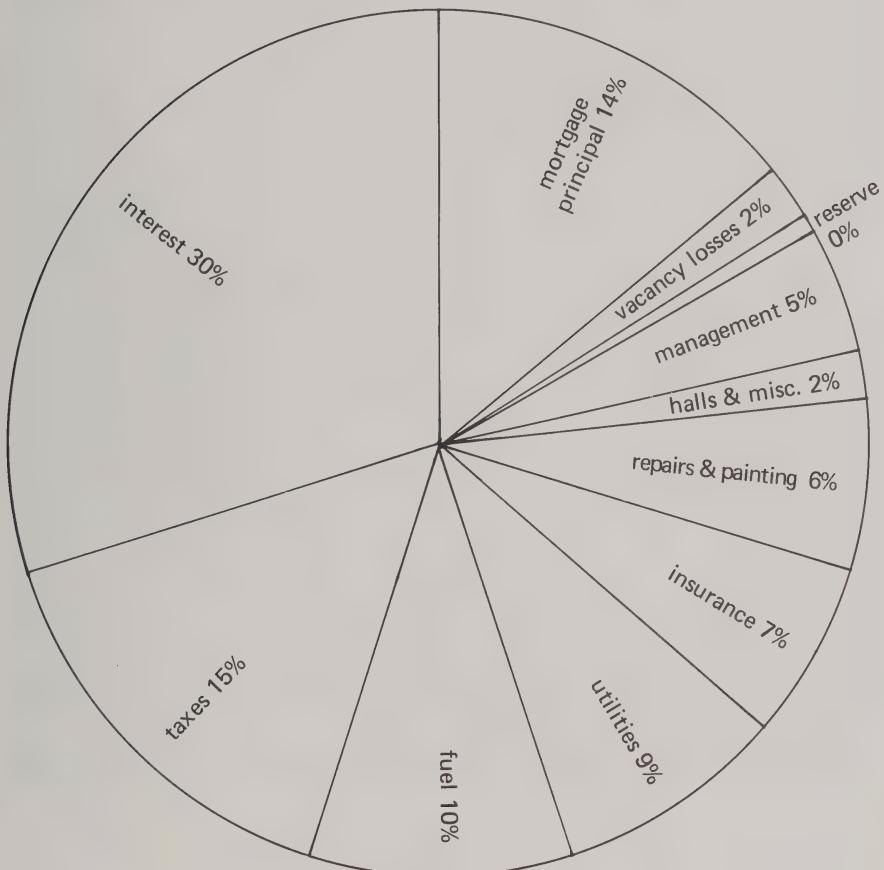
will be major problems for which there are currently inadequate reserves. There have been few problems with mechanical equipment in these initial years as would be expected. One of the buildings has experienced a settlement of the basement floor slab and this will require repair of some partitions and doors. Additional costs will be involved until the settlement of the slab is stabilized. Usual maintenance repairs have been required for doors and windows. The breakage of outside storm windows has been a problem, particularly at ground level.

The Just-A-Start program has been previously mentioned. During one summer a crew of six young people did maintenance work in four of the houses. The public halls in the four occupied buildings were repainted and substantial portions of the apartments repainted. Tenant reactions were favorable, particularly as the work was done in accordance with the individual family's request. SECD supplies all of the paint, equipment and the general supervision of the work. The program, as carried out that one summer, has not been possible since.

SECD has a full-time property superintendent taking care of the houses. Current rents for the fifty apartments do not cover the cost of one full-time maintenance person, even if this person were to take care of much of the painting and incidental repair work.

Laundry facilities have been provided in the basement public hallways of Projects 5, 6 and 7 and are planned for subsequent projects. The machines are operated by tokens sold to the

## CURRENT USE OF RENTAL INCOME OF PROJECT 7



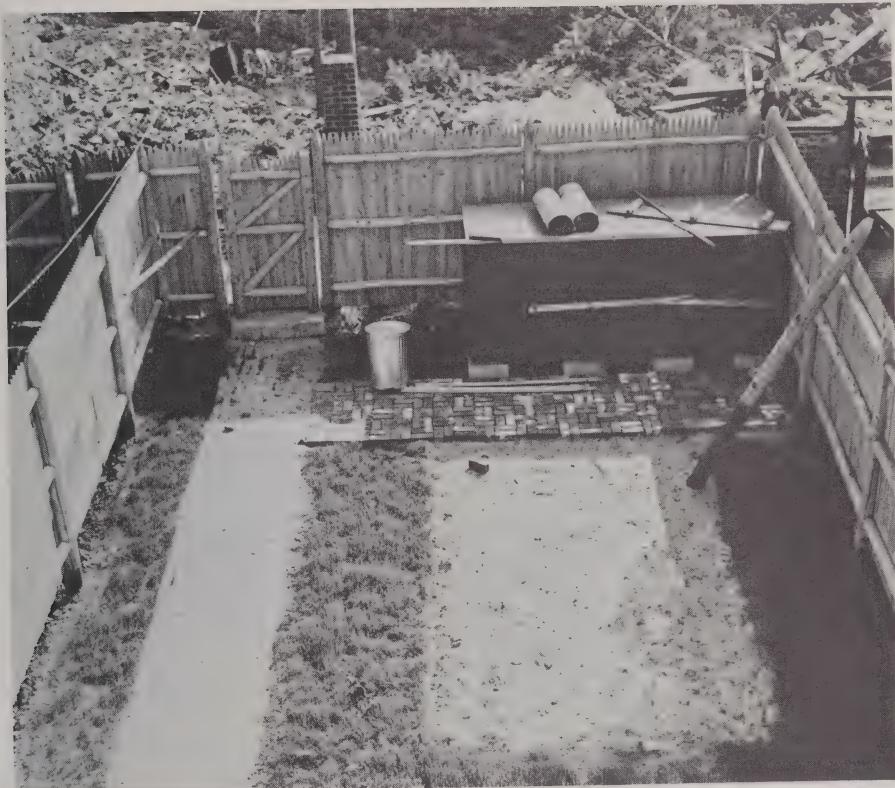
Depreciation, which is not included in the rent, is equal to 19% of the rent.  
(See Table XXX.)



tenants at the management office. The laundry equipment company retains ownership of and services the equipment, collects the tokens, bills SECD on the basis of the tokens used and allows SECD a commission. These washers and dryers have proven to be useful. Providing these facilities obviates the need to provide laundry areas within the limited space of the apartment kitchens.

The care of the apartments has varied. A number of apartments are in excellent condition and show little wear. A few have suffered from bad housekeeping and will require substantial redecorating. A few of the kitchen counters have been damaged by placing hot pots on the plastic surface and the cost of repairing electric stoves has been found to be very high.

SECD is trying several programs to involve tenants in management. In each of the projects, one of the tenants acts



as a management aide. This person sees that the trash barrels are put out on trash collection days (twice a week), checks the halls, replaces lamps in the public stairways, shovels snow off the walks, provides general surveillance of the property and reports emergencies to the management office. A small monthly cash payment is made for these services. Garbage disposals are not provided in the individual apartments and each family is asked to take its trash and garbage and place these in barrels in a trash-barrel shed in the rear yard. This program has worked with reasonable success. Families have also been asked to sweep and keep clean the portion of the public stairway immediately outside their apartment door. SECD's staff or outside help do the heavy cleaning of the public stairway. SECD intends to experiment with programs in which the individual tenants help with the painting and interior decorating of their apartments. It is also planned to suggest to the tenants that they arrange the front and rear yards to their own needs and tastes. It has been SECD's experience that these things take time and that the organization of the families within a project is difficult, particularly where there is no critical issue which is important to all the tenants.

## Administrative Expenses

In relation to the size of the operation, SECD found HUD/FHA's administrative requirements burdensome and a good deal more costly than the allowed management fee. A management office, central to the houses, is required. An annual audit prepared by a certified or licensed public accountant is required for each project. The cost of the audit on some of the projects exceeds the entire management fee provided in the rents. Separate financial records and checking accounts are required for each project, including a special account for security deposits.

Management of low-income housing is inherently difficult. In SECD's situation, there are two added factors — one, the somewhat fragile construction of the South End row house and two, the scattered location of the houses. Both of these factors immeasurably increase the difficulties of managing the projects. However, the quality of the housing is unusual and with the general improvement of the South End, the value of the housing will become increasingly apparent to the tenants. Hopefully, the care of the apartments will continue to improve, and with minimum vacancy losses and some outside funding of the central management staff, the projects should be able to survive. However, rent increases are inevitable if the projects are to avoid cash losses.

## Depreciation

Operating expenses on which FHA rents are based do not include depreciation. From HUD/FHA's point of view, rents must cover operating expenses and debt service costs only. However, depreciation plays an important part in real estate financing. Even on the extremely optimistic 45-year economic life established by HUD/FHA, depreciation losses are equal to approximately 19% of annual rent income (see Table XXX). This is greater than the annual payment of amortization of the loan. If rents are merely covering operating expenses and debt service, depreciation expense is a loss. One of the disadvantages of non-profit operation of rental property is that this depreciation expense or loss cannot be used as an offset against taxable

TABLE XXX

## AMORTIZATION AND DEPRECIATION AS A PERCENT OF ANNUAL RENTAL INCOME

Project	Initial Amortization as Percent of Annual Rental Income	Depreciation as Percent of Income, Based on FHA Estimate of Effective Economic Life <sup>1</sup>	
		Straight Line	Accelerated Depreciation <sup>2</sup>
1	17%	23%	36%
2	15%	22%	34%
3	17%	23%	37%
4	18%	25%	38%
5	17%	23%	37%
6	17%	21%	34%
7	17%	19% <sup>1</sup>	35%

<sup>1</sup>FHA estimated economic life on Project 1 through 6, 45 years, on Project 7, 55 years. Depreciation of portable equipment on 10-year life basis.

<sup>2</sup>Annual average ratio of depreciation to income, first five years, sum of the years-digits method.

income. Investors in a limited dividend corporation can use this loss as an offset against taxable income from other sources. An accelerated rate of depreciation can be used and this will increase the depreciation loss in the initial years. These depreciation losses, which are generated without a further use of cash, are an essential ingredient in real estate financing. The depreciation on Project 6 on an accelerated basis figured on a 25 year economic life of the buildings would be about \$5,600 per year for the first five years. If this loss were applied against taxable income from other sources, and the income tax rate were the corporate rate of 48%, the tax saving would be equivalent to 23% of the 11% equity investment in the projects which HUD/FHA requires of a limited dividend corporation. This equity is not necessarily a cash equity. Rate of return on cash invested may be much higher.







# 7 CONCLUSIONS

This study was an experiment of limited scope.

It sought to explore the methods and costs associated with rehabilitating South End row houses into apartments for rental to low-income families. Under the project, 50 apartments were to be rehabilitated and the costs and time of the entire process were to be accurately recorded. A number of means were to be used in concert and this was done to the extent possible. The project has produced the information which it was supposed to, and therefore, as such, has been a successful experiment. Its findings raise serious questions about the feasibility of row house rehabilitation for low-income family occupancy, by the means and methods described, in the absence of subsidies to the families which reduce economic rents to a given portion of family income.

## Ways and Means in Concert

The application for the HUD Grant proposed that an improved way of producing housing might be found by using the following aids and means in concert:

1. A charitable non-profit Corporation, whose Board includes persons familiar with banking, real estate and community affairs, together with local resident leaders familiar with the area and knowledgeable about possibilities of rehabilitation.
2. Availability of low cost properties, particularly properties which the City of Boston had acquired through tax-foreclosure.
3. A full time director familiar with building construction and housing.
4. Work crews
5. Development "know-how" gained through cumulative experience with a number of rehabilitation projects.
6. Mass purchase of materials, reduced unit cost for fees, services, financing and overhead costs, that result from the capacity to undertake a number of projects at one time and in one locality.
7. Financing through conventional sources and HUD/FHA Programs which provide funds at below-market interest rates to the extent possible.
8. Use of architects with proven ability in rehabilitation work and a knowledge of housing finance.

## CONCLUSIONS

9. Tax relief provided under Massachusetts General Laws or under taxing policies of the City of Boston.
10. Use of the Corporation's own capital for equities in the properties to supplement mortgage financing, so that rents can be held within reach of low-income households, if at all feasible.

All of the above were employed to some degree in the project. Some proved to be essential ingredients of successful housing development and others of little usefulness in the kind of housing which the Corporation was able to develop.

SECD is a charitable Corporation and, as such, is eligible for grants from charitable foundations. It was on this basis that it raised its original working capital. The Board of Directors of the SECD not only sets corporate policy but concerns itself with the general operation of the Corporation. Board committees serve in advisory capacities and individual members of the Board provide advice on housing management and legal and business matters. The President of the Corporation is involved in all important policy decisions and gives extensively of his time in connection with carrying out the project and the review and signing of legal documents in connection with housing development. The Treasurer of the Corporation, and others, have active roles in the Corporation's affairs. Board members serve without compensation. Their contribution is invaluable and has been of material benefit to the success of the project.

Low cost properties were available and were acquired. Tax foreclosed properties owned by the City of Boston were in very bad condition, and this contributed to the high cost of rehabilitation. On balance however, it is believed that low cost acquisitions did contribute to achieving lower rents.

The project had a full time director from its inception. Housing development requires constant attention and prodding and a full time staff is a necessary ingredient.

Work crews of semi-skilled, local people were not organized as contemplated in the grant application. This was made impractical by the requirement to pay all construction personnel prevailing wages. If the costs were to be valid, skilled mechanics had to be employed. The corporation did attempt to involve unskilled youth in a

work training program but this proved to be unsuccessful as described earlier. The Corporation organized its construction operations along traditional lines.

SECD's experience suggests that an effective job training program must provide flexible classifications of work, adequate supervision, and where prevailing wages are required, some payment to the employer for the production differential between the trainee and the skilled mechanic. A job-training program cannot be achieved by edict. The economics of housing construction, particularly for the low-income family market, should not be asked to absorb the costs of manpower training without special funding for that particular purpose.

Over the course of the project, the corporation became skilled in HUD/FHA housing processes and, with experience, efficiencies were achieved. This suggests that these skills are prerequisites for a large rehabilitation housing effort if, and when, adequate funding and mortgage financing becomes available.

Mass purchasing of materials had relatively little impact on the costs of the housing produced. 50 apartments are too few to yield substantial purchasing economies of building materials. Reduced fees and overhead costs were achieved during the program as larger projects were undertaken. This indicates that, with a substantial increase in the scale of operations, fees and overhead costs could be significantly reduced on a per apartment basis.

Financing was limited to the HUD/FHA below-market interest rate program, and there was no opportunity to test financing from conventional sources. While there are substantial administrative costs related to obtaining HUD/FHA insured mortgage loans, there is little doubt but that a long term below-market interest rate mortgage loan contributes significantly to reduced rents. Of the means used, this was the most significant in reducing the rents of the housing. Financing housing projects under Section 221 (d) (3) also provides mortgage loans which are intended to cover total development costs. This is important for non-profit corporations since, in this manner, an extensive amount of housing can be developed with limited funds.

## CONCLUSIONS

Three architectural firms were employed in the course of the project, all of whom had had experience in rehabilitation and are concerned with low-income housing. In the case of each of the firms, a great deal had to be learned as the project proceeded because the rehabilitation of South End row houses presents special problems and requires unique solutions. Each of the firms worked closely with SECD's staff and this contributed greatly to the success of the project.

The Corporation was successful in obtaining tax relief from the City of Boston as contemplated. This made a modest contribution to lower rents, and should be of even greater significance in the future when property values and assessments increase.

Financing all the projects with HUD/FHA insured mortgage loans pursuant to Section 221 (d) (3) made equity investments in the properties impractical. The Corporation did provide equities where necessary to supplement mortgage financing. Having capital which could be invested in the projects was an important factor in getting the construction of initial projects underway at a time when SECD was unfamiliar with costs and where there were differences with HUD/FHA about costs and other items. Some "free capital" is an essential ingredient in getting novel housing projects such as this started.

Even though the above means were used in concert, their collective contribution did not provide a method by which rehabilitation and direct rental of South End row houses to the great majority of low-income families was possible. An average two-bedroom apartment rent of \$106 per month and an average three and four-bedroom apartment rent of \$143 per month is beyond the means of most low-income families. Only through the Public Housing Leased Program, where the individual family pays only a portion of the rent — a portion related to the family income — could the rehabilitated housing be brought within the means of low-income families.

## Methods and Costs of Rehabilitation

The relatively high rents of SECD's apartments were caused by the high cost of rehabilitation and the high cost of

operating small, scattered rental projects of a single family home type of construction. Residential rehabilitation costs are largely controlled by the nature of the original structure, its condition and its adaptability to the new proposed use. If extensive structural changes are necessary, the costs will inevitably approach the costs of new construction. In most cases, the South End row house is too large to be used as a single dwelling but too small to constitute, by itself, an efficient multi-family structure. Therefore, South End row houses must generally be divided into three or more apartments and they are not easily adapted to this use. The original floor layouts do not lend themselves to the construction of two or more bedroom apartments so desperately needed by the relocation families in the area. An average rehabilitation construction cost of \$12.30 per gross square foot is much higher than originally anticipated by SECD, and three times as high as the cost indicated by feasibility studies done by the BRA in 1964 when the project started.

There is a "tipping balance" in rehabilitation work at which point it becomes less costly to remove and replace old finishes than to patch and restore them. The project began with attempts to conserve and restore as much of the original construction as possible. But it ended up essentially reconstructing the entire interior of the houses. This is a classic example of the usefulness of an actual field test. It is unfortunate that the project took as long as it did to complete, but only by completing a series of projects and operating the properties could all of the required data and experience be obtained.

A continuing program of South End row house rehabilitation will require new aids in connection with property acquisitions. The supply of city-owned buildings is diminishing and the price of other properties is rising. Higher acquisition costs will result in increased rents. A program of public acquisition and write-down is suggested as a solution to this problem. Under a program of public acquisition, an orderly relocation plan for families currently occupying the houses could be carried out. A continuing program would also have to look carefully at rising costs of construction and operation in relation to rent ceilings of both the HUD/FHA and the Boston Housing Authority (BHA). Rents in SECD's housing projects are approaching the maximum levels permitted, and with rising costs of labor and material, future rents will be higher.

## CONCLUSIONS

### HUD/FHA Financing

Financing small, row house rehabilitation projects with mortgage loans insured by HUD/FHA under the provisions of Section 221 (d) (3) of the National Housing Act was found to be expensive and the related procedures time consuming. Construction costs were not clearly understood at the start of the project. A knowledge of costs is essential for an expanded program. Where a series of projects is undertaken as in this study, allocations of below-market interest rate funds on a project-by-project basis is a cause of delays. The need to establish the feasibility of each individual project, rather than an over-all program, involved delays. Inadequate allowances for contingencies caused reprocessing of projects and the inflexibility of regulations caused delays, particularly when rulings had to be obtained from regional and national offices. The results of this study make it clear that unless large projects are carried out, special provisions are necessary for funding the relatively higher administrative costs associated with the mortgage financing of small projects.

Rehabilitation of South End row houses in the fashion utilized in this project and their direct rental to low-income families is basically an uneconomic operation. In this kind of endeavor, private organizations need not only cooperation but a commitment from the public agencies to the success of the venture. The accomplishment of the community improvement program in areas such as the South End will require the intervention of socially motivated private corporations and individuals. The study indicates some of the difficulties which these corporations and individuals may encounter.

### Advantages and Disadvantages of Non-Profit Housing Development

There are advantages and disadvantages in non-profit housing development. As discussed previously, the contribution of SECD's Board of Directors is invaluable. SECD has access, through its Board of Directors, to public agencies and the community, although its non-profit status has little effect on its day-by-day operations with public agencies and the public. SECD's status as a non-profit corporation is expected to be of more significance in relation to the

management of the projects and the willingness of the tenants to be involved in the Corporation's activities and programs. Housing development is a business, and SECD attempted to meet usual business standards of efficiency and use of funds. This gained for the Corporation the confidence of the public agencies, lending institutions and other private organizations. SECD found that a full-time staff and adequate funding is essential for housing development and operation. A firm commitment to SECD's program by its Board of Directors was found to be important because housing development, with all its pitfalls and delays, requires persistence and patience. The Board provides a continuity in the Corporation's policies and programs. SECD has a close working relationship with its sponsoring agency, United South End Settlements (USES), and this is helpful. USES not only was the prime mover in the formation of SECD but renders support to SECD in its management program.

The results of the study suggest that housing management is as critical to the success of low-income housing as housing development itself — and more difficult. Once development costs are determined, housing development is dealing with knowns. Housing management, on the other hand, is dealing with many unknowns. The kinds of families, the care of the building, the amount of vandalism will vary over a wide range. The quality of construction of SECD's projects was modest, and the property will be intensely used, particularly by those families with children. The need for special services for families with special problems adds to management costs. Selective screening of the families is not an answer to housing all qualified low-income families.

The study results indicate that the management of small, scattered housing projects is expensive. SECD has a great deal to learn about housing management and how it can be organized to permit the participation and contribution of the families. Involving tenants in the operation and management of the housing is neither an easy task nor does it happen quickly. There are indications however, that where the families have a proprietary interest in their apartment and property, operating costs will be lower. It was not within the scope of this study for SECD to concern itself with the formation of cooperatives or other forms of ownership which might be arranged for the tenants, but this will be undertaken in the future program of the Corporation.

## CONCLUSIONS

While SECD had the promised support of key officials and public agencies as well as the cooperation of the HUD/FHA, the Boston Redevelopment Authority (BRA), and departments of the City of Boston, the record indicates that SECD had the usual problems one encounters in dealing with public agencies. The staff of many of these agencies treated SECD with small regard to the public investment which had been made in the project. There was a good deal of "business as usual". The BRA offered little technical advice except on direct request. There was little coordination of the programs for public area improvements with SECD's housing development program. SECD never felt that it was operating within an over-all strategy for neighborhood improvement. The City of Boston departments were skeptical of non-profit corporations and did not fully cooperate with the Corporation until they became more fully aware of the Corporation's programs and its competence. The project did not have a commitment from political leadership. This is understandable in view of its small scale and limited objectives. However, the fact that it was carried out under usual regulations and procedures make its findings more generally applicable and useful.

## Community Impact

In 1964, the BRA estimated that approximately 50% of the residential structures in the South End were owner-occupied. Most of these owners are neither interested in, nor qualified for, the kind of financing and level of rehabilitation which SECD accomplished under the project. For these reasons, much of the information which SECD developed is not relevant to rehabilitation for individual home owners. Nevertheless, information on the cost of rehabilitation is useful to anyone considering the substantial renovation of his property. SECD would suggest that there is much to be learned from its own experience and that starting a rehabilitation job, and then finding that the mortgage financing is inadequate, is a serious problem — particularly for the small property owner.

The limited scale of the study project meant that its impact on the neighborhoods involved would be small. The on-going program of SECD will include the rehabilitation of eight row

houses in the immediate vicinity of five of the project houses. This concentration of improved housing is expected to have an impact on the immediate neighborhood, and hopefully will be augmented by the installation of the public improvements called for in the urban renewal plan.

More recently, low-income families in the South End have been articulating their desire to remain in the area, and have been pressing for additional standard rental housing at rents which low-income families can afford. SECD's experience has called attention to some of the problems which must be solved if residential rehabilitation in the South End of Boston is to be accomplished for the benefit of these families.

### Application of Findings to Other Areas

The particular characteristics of the South End row house and the unique type of rental housing which was produced have been stressed in this report. Specific findings apply only to the South End row house. While there are few, if any, "South Ends" in the Country, many old neighborhoods in the inner cities of America have large single-family houses developed during the last century. SECD's experience provides a useful yardstick which can be applied nationally by public and private agencies engaged in converting old single-family structures into contemporary apartments. The experience is also relevant to the problems which non-profit, cooperatives and limited dividend corporations will encounter should they attempt to develop small, scattered projects under HUD/FHA rules and regulations.

### An Overview

SECD sees its experience under this project not as an end, but as a beginning. The program was conceived as an experiment to find out more about South End rehabilitation for low-income families. SECD tried to employ the most favorable means possible, and it has found these to be inadequate without programs which limit the rent that the family pays to a fixed percentage of the family

## CONCLUSIONS

income. The findings reduce the number of unknowns of South End rehabilitation, and make it possible for public agencies and others to gauge the kind of commitments that will have to be made if South End row houses are to be rehabilitated on a large scale for low-income families.

The costs of rehabilitating South End row houses was found to be three times the cost suggested by the BRA at the outset of the project. As of the present time, based upon its experience and what it learned from others, SECD believes that its determinations of costs are accurate, given the methods and programs described in this report. Future plans for the South End must take these facts into account.

SECD would conclude that if massive rehabilitation of South End row housing as proposed in the urban renewal plan is to succeed in providing good housing for the existing low-income families and individuals who now live in the area, new programs and commitments from both public and private agencies must be forthcoming. Otherwise, the renewal plan for the South End must be reconsidered.

## **APPENDIX**

**APPENDIX A** Street addresses of Project Houses

**APPENDIX B** List of FHA architectural requirements issued with commitments to insure mortgage loans.

**APPENDIX C** Chronology of Project 1

## **APPENDIX A**

### **LOCATION OF HOUSES**

Project 1	38 East Springfield Street
Project 2	10 Dartmouth Street
Project 3	216 Northampton Street
Project 4	23 Greenwich Park
Project 5 A	43 Dwight Street
Project 5 B	45 Dwight Street
Project 6 A	210 Northampton Street
Project 6 B	212 Northampton Street
Project 7 A	220 Northampton Street
Project 7 B	224 Northampton Street
Project 7 C	535 Massachusetts Avenue

**FHA ARCHITECTURAL EXHIBITS REQUESTED WITH AN APPLICATION  
FOR PROJECT MORTGAGE INSURANCE (FHA No. 2013-R)**

To be submitted in duplicate

**ARCHITECTURAL AND PLANNING EXHIBITS**

Refer to MPR of 3 or more Living Units, Appendix "D", for detailed information.

- 1 *Topographical Survey*
  - a. Show area in square feet and acres.
  - b. Contours.
  - c. Curb elevation
  - d. Show easements and encroachments or other limiting features.
  - e. Street widths.
  - f. Conditions on adjoining and opposite properties.
  - g. Show water outfall.
  - h. Utilities.
  - i. Signature by Licensed Surveyor or Professional Engineer.
- 2 *Plot Plan* (to agree with Survey and Legal Description, 1 inch equal 40 feet, minimum)
- 3 *Test Borings—Showing Water Table & Date.*
- 4 *Grading and Drainage Plan* (may be shown on Plot Plan) 1" = 20 ft.
- 5 *Planting Plan* 1" = 20 ft.
- 6 *Basement and/or Cellar Plan* (show car layout)
- 7 *Typical Floor Plan:* Show first floor variation, design of entrance detail.
- 8 *Section through Exterior Wall*
- 9 *Roof plan* showing Bulkhead, Roof Drains & Fan locations.
- 10 *Typical Front Elevation* (Show floor heights)
- 11 *Kitchen and Bathroom details*
- 12 *Schedules:* Doors – Windows – Finishes – Lintels.
- \*13 *Structural Plans in Outline.*
- \*14 *Mechanical Plans:* (Location of Plumbing and Heating Stacks, Convector, Electric Outlets and A.C. Sleeves may be shown on Architectural Floor Plans.)
- 15 Upon determination that preliminary working drawings and outline specifications are adequate, Sponsor is notified to submit Quantity Survey to include completion of Form 1088-c.

**\*General Note**

Items marked by asterisk may require amplification of plans or details in accordance with processing needs of the specific case. Also, additional exhibits may be requested as required for Special Site or Building Conditions. In both cases, Project Architect should contact our Chief Architect to co-ordinate submittal of exhibits.

**SUPPLEMENTARY ARCHITECTURAL REQUIREMENTS ISSUED WITH  
FHA COMMITMENT**

**ON SITE REQUIREMENTS**

- 1 Provide and construct all gas service connections of ample capacity to meter room, from the utility company's extension of property line, in accordance with the rules and regulations of the local utility company and subject to the approval of the Federal Housing Administration. Location to be shown on drawings.
- 2 Provide and construct underground electric service connections of land covered conductors in rigid conduit of ample capacities, from meter rooms to utility company pole in street and extending up pole required height and in accordance with rules and regulations of local utility company and the National Board of Fire Insurance Underwriters and subject to the approval of the Federal Housing Administration. The location of these service connections to be shown on drawings.
- 3 Pre-closing drawings must be submitted to show revisions in accordance with corrections shown in yellow or red crayon, and must be fully completed.
- 4 Pre-closing specifications must be submitted to show revisions in accordance with corrections shown in yellow or red crayon, and must be fully completed.
- 5 Provide complete schedules of all doors and windows on drawings showing type, material, finish and sizes. Also schedules of all exterior and interior finishes.
- 6 Ceilings over boiler rooms must be insulated against excessive heat penetration through floor construction to living space above, satisfactory to Federal Housing Administration.
- 7 Submit 1/2" or larger scale details of kitchen cabinet layouts; stair construction in various units; sections & entrances; typical bathroom layouts; sections and other special features.
- 8 Provide on-site lighting and indicate on drawings and within specifications.
- 9 Provide adequate facilities for the collection, storage and disposal of garbage and rubbish, satisfactory to Federal Housing Administration.
- 10 Provide laundry of adequate size and equipment.
- 11 Provide hose bibbs around exterior of building and indicate on plans and within specifications.
- 12 Specifications to contain no "Alternates" or "Or Equals".
- 13 All structural and mechanical drawings must be prepared by a registered professional engineer and his seal stamped thereon.
- 14 The heating system shall be computed for uniform inside temperature of 70°F when outside design temperature is -10°F.
- 15 Provide architect's contract acceptable to Federal Housing Administration.
- 16 Mortgagor shall submit, before initial closing, evidence providing for the installation, service and maintenance of one automatic washing machine and also one automatic drying machine.

- 17 Submit complete working drawings and specifications in accordance with M.P.S. # 2600 for Multi Family Housing, Appendix "A" Paragraphs D1 through D6 as applicable.
- 18 Submit a report by an independent mechanical engineer, registered in Massachusetts, stating the conditions and remaining useful life of all mechanical elements with respect to heating, ventilation, electric work, and elevators if applicable.
- 19 Floor drains to be provided in each basement door area, boiler room and laundry room.
- 20 All kitchens shall be uniformly modernized and to have similar facilities.
- 21 A general statement shall be incorporated in the specifications indicating that the contract shall include any and all repairs necessary to bring this building up to first class condition for maintenance free operation and attractive appearance both inside and outside. Also, it is the builder's responsibility to correct any unforeseen items for a well rehabilitated building as intended.
- 22 Provide storage area in basement in accordance with M.P.S. # 2600 Para M 403-6.4 and M 403-6.5.
- 23 Provide emergency type lighting complying with the City of Boston in all front stairwalls.
- 24 MORTGAGOR shall provide before initial closing an acceptance letter from the Post Office Department, stating that the type of mail box proposed and location thereof is acceptable to the Post Office Department.

## APPENDIX C

### CHRONOLOGY OF PROJECT 1

May 18, 1964	The Committee of the Permanent Charity Fund votes to make a grant of \$75,000 to United South End Settlements (USES) to be used as initial capital for South End Community Development, Inc., (SECD).
May 29	SECD is granted a non-profit charter under Chapter 180, Section 3 of the Massachusetts General Laws.
June 1	FHA advises USES to consult with them prior to the selection of any properties in order that they may determine that: <ol style="list-style-type: none"><li>(1) location of the properties is acceptable,</li><li>(2) physical security is acceptable, and</li><li>(3) the property will generate sufficient income to support the mortgage—Rental schedule being discussed at this time was between \$50—\$90 per month.</li></ol>
June 5	Boston Redevelopment Authority (BRA) informs Department of Housing and Urban Development (HUD) that they support USES' application for a demonstration grant and that the BRA is prepared to offer the following assistance: <ol style="list-style-type: none"><li>(1) provide tax-foreclosed buildings at no cost for rehabilitation,</li><li>(2) advice and assistance in the areas of cost estimating, rehabilitation design and advisory financial services.</li></ol>
June 8	USES submits a formal application to HUD for a demonstration grant pursuant to Section 207 of Public Law 87-70, for the purpose of aiding in the financing of a low-income housing demonstration program.
June 16	BRA informs HUD that they will give priority consideration to SECD for the acquisition of tax-foreclosed buildings to be rehabilitated under the demonstration project.
July 1	HUD approves USES' application for Low-Income Housing Demonstration Grant.
August 13	The FHA outlines procedures SECD should follow These are: <ol style="list-style-type: none"><li>(1) select areas in South End in which they are interested,</li><li>(2) get FHA approval of these areas</li><li>(3) prepare tentative before and after room layouts</li><li>(4) submit these to FHA for feasibility analysis</li><li>(5) receive from FHA recommendation for formal application submission</li></ol>
September 1	SECD suggests that the BRA recommend five or six appropriate tax-foreclosed buildings for use in the demonstrations. SECD stipulated that these buildings must be large enough to contain five apartments and also requests information on the condition of the buildings. Demonstration project covering a period of 30 months starts.
September 25	The BRA makes the following recommendations to SECD: <ol style="list-style-type: none"><li>(1) conduct rehabilitation in both white and non-white areas in the first phase of the project</li></ol>

- (2) reconsider the requirement that the buildings must have at least five units
- (3) acquire and rehabilitate some privately owned buildings in the first phase, and
- (4) consider acquiring privately-owned structures and rehabilitate them with non-demonstration funds.

BRA submits to SECD a listing of 32 buildings which it recommends as suitable for the demonstration. Only ten of this group are actually tax-foreclosed buildings, the rest are privately owned. The BRA suggests that SECD could make a private purchase of these buildings. Of the ten tax-foreclosed buildings, the BRA describes eight buildings as being in marginal condition and the other two as in fair condition.

#### NOTE

Of the four recommendations of the BRA, SECD complied with the first three. The fourth recommendation, concerning the acquisition and rehabilitation of a privately owned building with non-demonstration funds, was impractical from SECD's standpoint because at this time, all of its funds were committed to the demonstration. Of the second recommendation, SECD investigated the possibility of reducing the requirement for a minimum of five units but was informed by the FHA that this was a statutory requirement and could not be changed by administrative decision.

Of the ten tax-foreclosed buildings, SECD, after inspecting them, determined that just one building, 216 Northampton, was acceptable as an initial building in the demonstration.

October 23

The BRA submits for SECD's consideration a new list of twelve tax-foreclosed buildings. The BRA states that in its opinion the rehabilitation of these buildings is feasible and that all are located in priority rehabilitation areas. In addition the BRA requests SECD to undertake the rehabilitation of a vacant building at 161 West Newton Street which must be acquired from a private owner. BRA strongly recommends that SECD seek a waiver from the FHA on the five units requirement for each project.

#### NOTES:

The above mentioned list of tax-foreclosed buildings was developed at a number of meetings between SECD and the BRA. From this list, SECD selected five buildings. These were: 216 Northampton, 38 East Springfield, 23 Greenwich Park, 10 Dartmouth, and 45 Dwight. In addition, SECD agreed to consider the building at 161 West Newton Street.

November 2

SECD submits to the FHA for approval, a list of six buildings which have been selected in consultation with the BRA. Also submitted were before and after room layouts, tentative rent schedules and photographs.

November 4

The FHA stresses to SECD the importance of Urban Renewal Certification because without it, there is some doubt as to the acceptability of most of the areas that SECD has selected. FHA asks why the sites that were selected were scattered all over the South End. SECD replies that these were the *best, vacant, tax-foreclosed buildings available*.

## APPENDIX C

November 30 SECD formally requests that the BRA turn over to them without consideration, the five buildings previously mentioned.

December 1 In a further discussion on the selection of sites, the SECD explains to the FHA that it intends to enlarge holdings in each of the areas selected to the extent possible and feasible. FHA states that it will do everything possible to make the program a success. To this end FHA agrees to approve all six sites as to location as long as they:

- (1) meet the statutory requirement for the minimum number of units (five),
- (2) that the buildings are structurally sound, and
- (3) that the rents will be between \$50-\$90 per month.

FHA states that two or more buildings could be included in one project as long as they are within one block of each other.

December 2 In a visit to Washington, SECD is informed by the FHA that the statute clearly requires a minimum of five units per project under Section 221 (d) (3).

December 3 The SECD informs BRA that it has verbal approval from the FHA of five tax-foreclosed buildings. The sixth building at 161 West Newton Street is no longer being considered.

December 4 SECD stresses to FHA the importance of having market and feasibility studies done concurrently with the development of plans and specifications. FHA 950 minimum standards are to be met. It was also agreed that architectural drawings and construction costs would be handled in a simplified manner. This would include:

- (1) FHA review of room layout drawings;
- (2) SECD prepares detailed drawings, write-up and specifications;
- (3) the latter are reviewed and approved by FHA;
- (4) joint inspection of the buildings;
- (5) architect completes drawings;
- (6) SECD obtains contract bids and architect prepares cost estimates;
- (7) SECD reviews cost estimates with consultants;
- (8) SECD resubmits application for mortgage insurance with substantiation of building costs.

December 7 SECD is informed by FHA that a preliminary application for mortgage insurance (Form 2013) should be submitted.

December 14 SECD submits mortgage application, outline specifications and before and after floor plans on four buildings; 216 Northampton, 38 E. Springfield, 23 Greenwich Park, and 10 Dartmouth. FHA starts feasibility processing of these applications.

Jan. 13, 1965 SECD submits the rehabilitation specifications for first four buildings to the BRA for its comments and suggestions.

January 18 The BRA formally acquires the five buildings that SECD selected.

January 26 The BRA suggests the following revisions in the rehabilitation specifications which had been submitted to them for review:

- (1) completely remove the unused chimneys;
- (2) install automatic heating controls (outdoors);

(3) not to install a complete fire escape unless specifically required. With reference to suggestions on methods for holding down rehabilitation costs, the following were recommended:

- (a) the mass purchase of materials;
- (b) reduce labor costs through the utilization of youth work crews and by SECD acting as its own general contractor; and
- (c) use alternative methods of property acquisition such as private purchase and utilization of larger buildings.

February 3 SECD submits revised architectural floor plans on the four buildings. The changes were suggested by the FHA architectural staff.

February 4 The BRA conveys the first five buildings to SECD.

February 5 The FHA Commissioner announces his decision to put the first five SECD's buildings under Section 233 of the National Housing Act. This section concerns experimental housing and eliminates problems caused by the absence of urban renewal certification. It still permits SECD to receive the benefits of Section 221.

February 9 In order to facilitate architectural designs, a contract for partition removal and cleaning of the five buildings is awarded.

February 10 FHA states that the anticipated processing time from receipt of application to commitment should be approximately five to six weeks.

March 19 At a meeting with HUD in Washington, SECD is informed that all of the demonstration projects must be FHA financed.

March 25 FHA advises SECD to submit drawings and specifications on proposed rehabilitation. From these, construction costs are to be determined and then a final mortgage application filed.

April 2 SECD submits to the BRA for its approval, the final plans and specifications for 38 E. Springfield. BRA approval of plans and specifications is required by the disposition agreement. SECD submits an application to the building department for a building permit for 38 E. Springfield Street.

April 5 SECD submits to the FHA the final drawings and specifications on the first four buildings.

April 26 The SECD is informed by FHA that FHA needs cost of construction. This could be done by submitting contractor bids. If SECD wishes to act as its own general contractor, it should submit a quantity take-off estimate or submit a construction cost based on subcontractor bids.

April 28 Six bids received on 38 E. Springfield. The range of the bids is as follows:

1. \$21,000	4. \$36,500
2. \$29,500	5. \$41,500
3. \$31,500	6. \$54,000

Bid number 1 is withdrawn by the contractor. Bids did not include sprinklers, fire windows, and other items, the requirement for which was being reviewed by the Board of Appeals, and appliances and light fixtures which SECD planned to buy direct from the supplier.

## APPENDIX C

May 5 SECD submits to FHA the cost breakdown on 38 East Springfield Street based upon contractor bids.

May 17 SECD's application for building permit at 38 East Springfield is denied by the Building Department on the following grounds:  
(1) lack of a 3' 6" stairway;  
(2) lack of a 2-hour fire-resistive enclosure around the stairs;  
(3) lack of steel windows with wire glass within five feet of a fire escape;  
(4) winder stairways prohibited.  
The Board of Directors of SECD votes in favor of seeking a variance on these items.

May 28 SECD files an appeal on the Building Department's denial of its request for building permit.

June 3 BRA informs SECD that it will support the appeal from the Building Department's denial of a building permit at 38 E. Springfield Street.

June 17 FHA informs SECD that their calculations indicate that the mortgage loan on the first four buildings is \$50,000 each. After a review of these calculations, it is agreed that these calculations are high. It is finally agreed that construction costs are to be carried at \$35,000 for 38 E. Springfield, to which must be added the architect's fee of \$3,400 to arrive at the cost of improvements.

June 24 BRA approves the rehabilitation construction drawings for 38 E. Springfield Street.

July 7 SECD files a revised application for a mortgage loan insurance commitment.

July 19 SECD is informed by the FHA that SECD has received an allocation of \$455,000 at 3-3/8% interest.

August 10 The Housing Act of 1965 is passed by Congress. This Act requires for the first time, the payment of prevailing wages in the construction of all non-profit 221 (d) (3) projects. This Act also stabilizes the below-market interest rate at 3%.

August 18 The Board of Appeals grants relief and clears the building permit for 38 E. Springfield Street.

September 9 SECD is informed by FHA that the commitment will be issued the following week.

September 13 SECD is informed by FHA that SECD must re-file its mortgage applications to take into consideration the prevailing wage requirements of the Housing Act of 1965.

September 17 SECD re-files the revised applications to reflect the prevailing wage requirement.

October 4 SECD is informed by FHA that processing on all mortgage applications is being delayed because the Regional Office of the FHA is reviewing real estate tax arrangements.

October 8	SECD received first mortgage insurance commitment on 38 E. Springfield Street under Section 221 (d) (3), pursuant to Section 233 (experimental housing).
October 27	Pre-construction Conference on 38 E. Springfield Street is held.
November 1	Construction begins on 38 E. Springfield Street.
December 1	SECD determines that the Standard FHA Regulatory Agreement would, in effect, bar the Corporation from carrying on activities other than the operation of one individual housing project. After much consultation it was decided that the FHA would delete these Sections but that the SECD would promise to transfer to a non-profit entity satisfactory to FHA.
Jan. 14, 1966	Initial closing held.
May 1	SECD starts to accept applications for prospective tenants for 38 E. Springfield Street.
May 26	Public dedication of 38 E. Springfield Street.
July 25	First tenant moves into 38 E. Springfield Street.
August 1	38 E. Springfield Street is completely rented.
October 3	Cost certification filed with FHA.
Jan. 26, 1967	Final loan closing and assignment of loan to FNMA.





















